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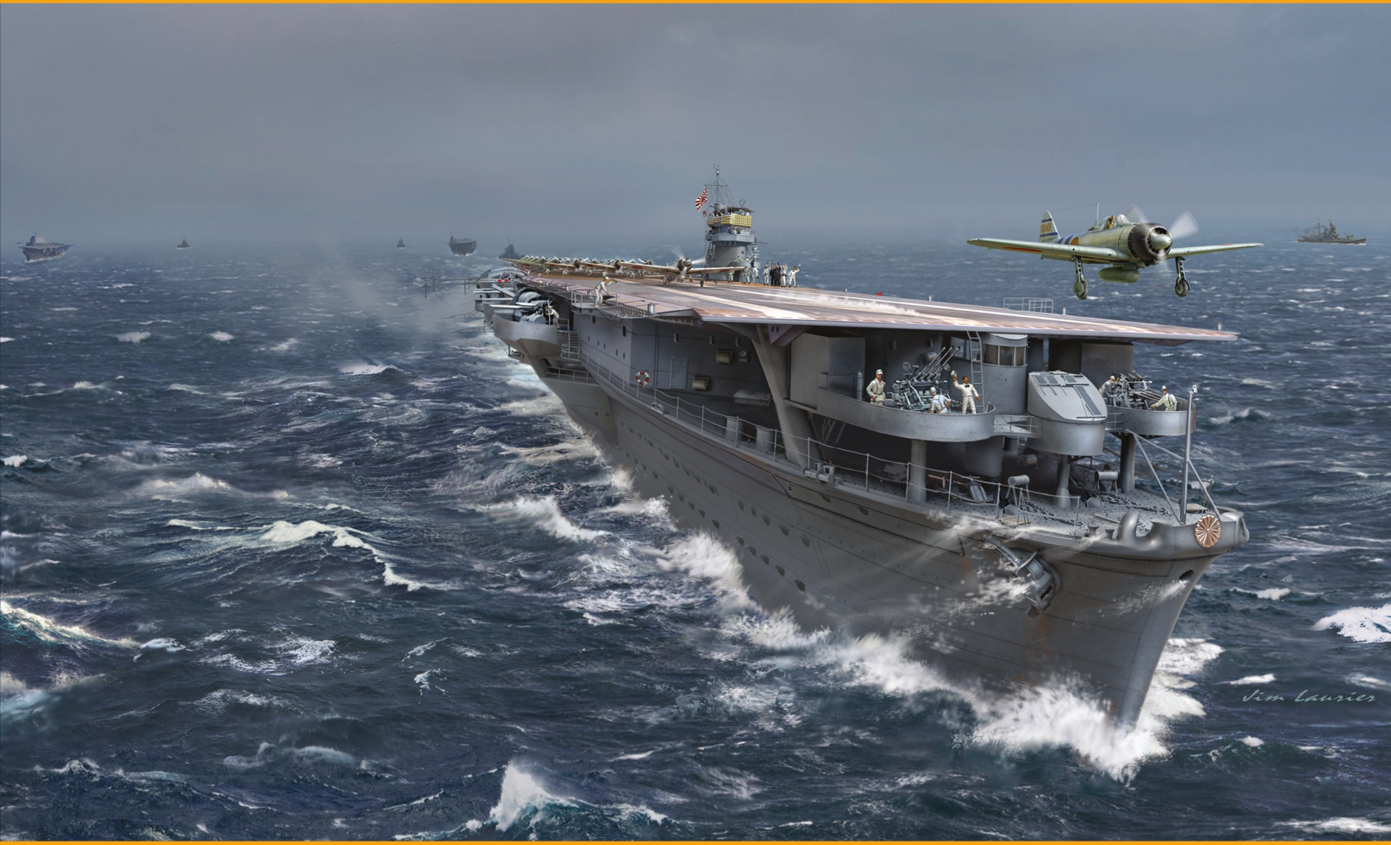
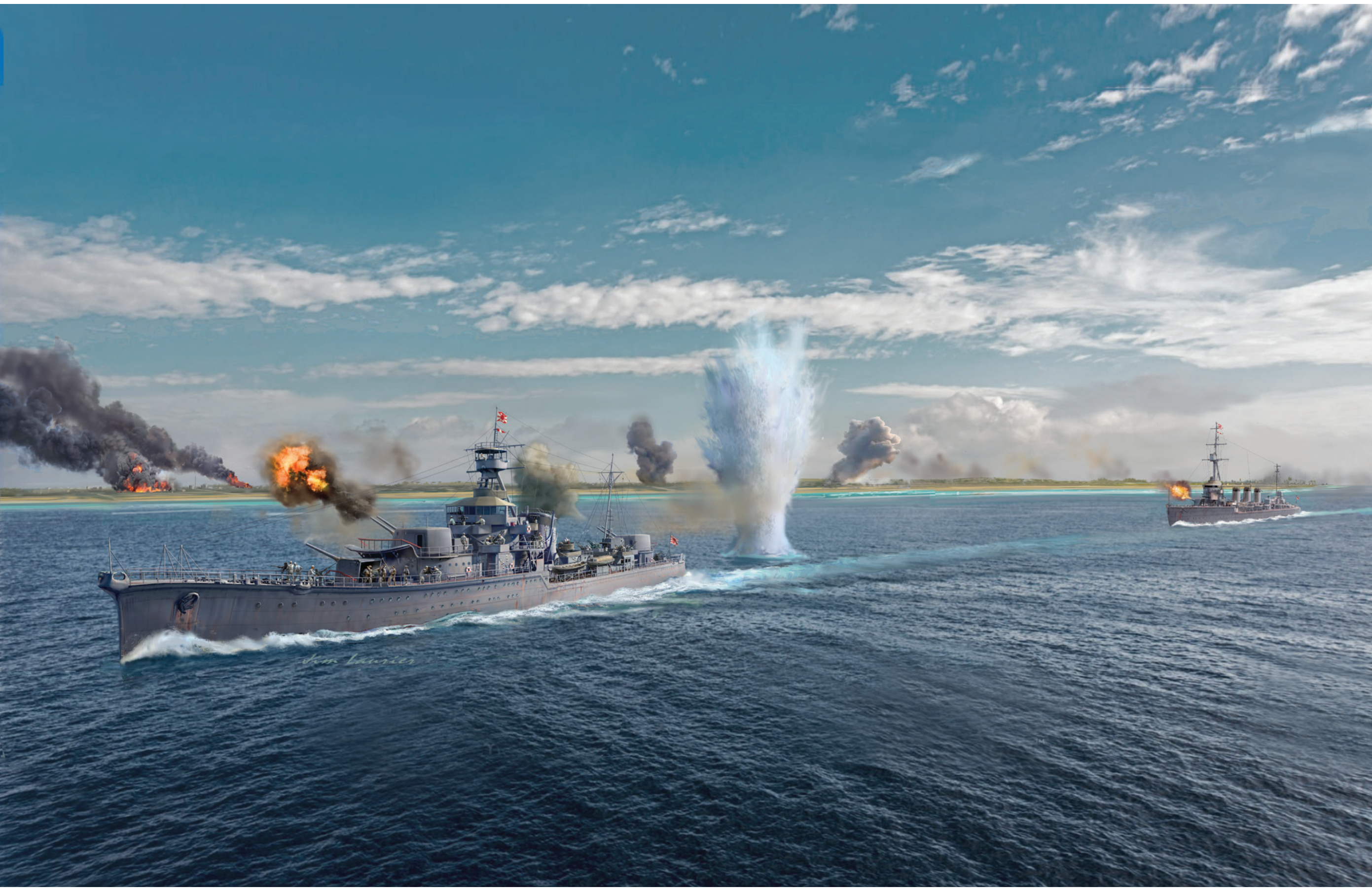
JAPANESE COMBINED FLEET 1941–42

The IJN at its zenith, Pearl Harbor to Midway


Jim Laurier

Mark Stille

Illustrated by **Jim Laurier**



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THE FLEET'S PURPOSE

BACKGROUND TO WAR

The Imperial Japanese Navy (IJN) was not identifiable as a separate force from the army until 1872. At that point, it was a collection of sailing ships lacking the ability to protect Japan from predatory Western powers. Japanese leaders recognized the need to build a modern navy to defend the home islands. Starting from its humble origins, the IJN developed quickly with foreign assistance, using the British Royal Navy (RN) as a model. By the 1880s, Japan began to develop a naval arms industry and to build steam ships domestically. From its original purely defensive stance, it was capable in 1894–95 of fighting a naval war with China. A complete victory over the Chinese Beiyang Fleet demonstrated how far the IJN had come. In the aftermath of victory, the IJN planned a major expansion that included some of the best warships in the world (though these were still provided from foreign sources). Now linked by treaty with the RN, the IJN was a balanced fleet with well-trained and dedicated crews, backed up by a naval industry increasingly capable of producing its own ships, weapons, and munitions.

By 1904, the IJN had grown to become the fourth largest navy in the world. When Japan went to war with Russia the same year to determine which nation would be dominant in Northeast Asia, the Combined Fleet (formed in 1903 as the navy's battle force) was ready. To gain victory, the Combined Fleet had to move an expeditionary force to the Asian mainland and then support it, while defeating Russian naval forces. All of these missions were accomplished. Final victory against the Russian fleet was achieved in epic fashion at the battle of Tsushima Strait on May 27–28, 1905.

From its war with Russia, the IJN took away several enduring lessons. Foremost of these was the concept of a decisive engagement. Even a smaller navy, under the right conditions, could defeat a larger one in a single battle and determine the outcome of a war. The notion that superior quality was essential to beat a larger opponent was enshrined in Japanese naval thinking. Key to victory in a decisive engagement was a well-handled battle fleet built around powerful battleships. In the final analysis, the big guns aboard battleships decided battles. There were other tactical lessons, like the value of speed, the requirement that the battle line be able to operate together, and the importance of torpedoes in defeating a larger foe, but belief in the capital ship was dominant.

By 1907, the IJN was already thinking of the United States Navy (USN) as its most likely future enemy. There was no basis for this assumption, other than the fact that the IJN and the USN were the two largest navies in the Pacific. Using the USN as a theoretical enemy did have its advantages in terms of budgeting. The United States possessed vastly superior industrial power compared to Japan and could easily turn this into naval might. To fight a successful defensive war against the larger USN, the IJN developed the concept that it had to be 70 percent as large as the American fleet.

As the Western powers were engulfed in World War I, the Japanese used the opportunity and their alliance with the United Kingdom to snap up a collection of German islands in the Central Pacific. With little fighting, the IJN emerged from the war as a clear victor. During and after the war, the USN announced a massive naval build-up. To maintain the cherished 70 percent ratio, the Japanese were also forced to initiate new naval programs that strained the nation's finances. The evolving naval race was forestalled by the 1921 Washington Naval Conference. An agreement signed the following year required the five largest naval powers of the day to halt construction of capital ships and reduce their battle fleets to specific tonnage limit. Though the IJN was only granted 60 percent of the capital ships allowed to the USN and the RN, other types of ships (except aircraft carriers) were not restricted. The treaty also restricted construction of naval bases and fortifications in the Pacific, essentially leaving Japan as the dominant naval power in the Western Pacific.

The restrictions from the 1922 Washington Naval Treaty were renewed and broadened by the First London Naval Treaty of 1930. The Japanese withdrew from the Second London Naval Conference and were no longer bound by

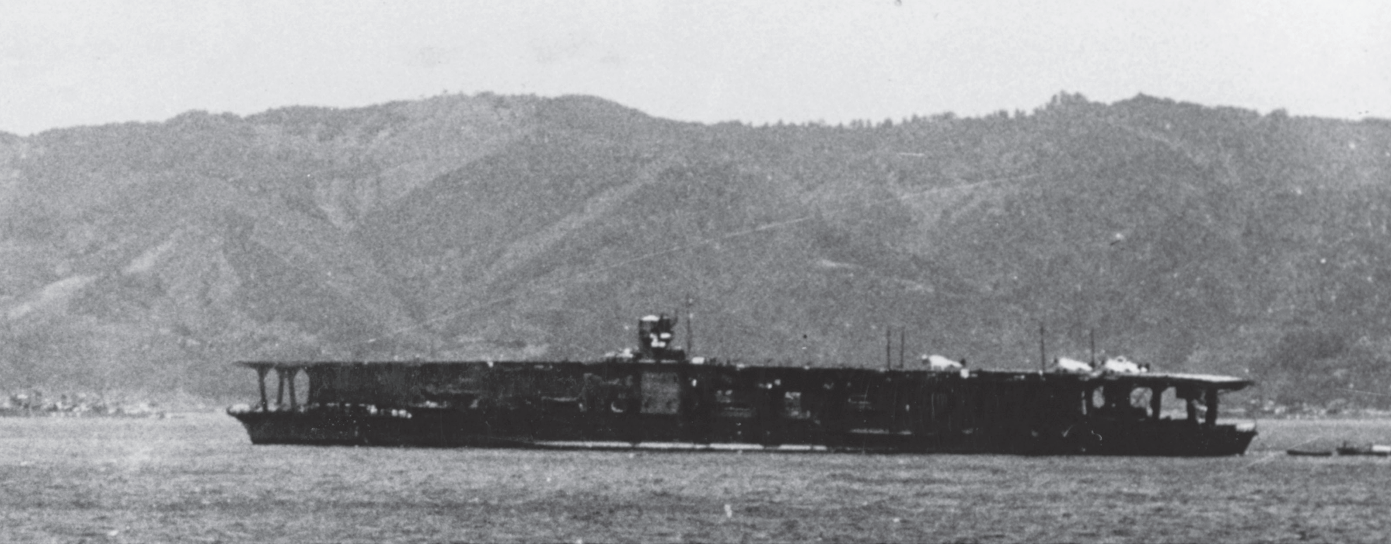
Yamamoto Isoruku assumed command of the Combined Fleet in August 1939 and was still in control when the fleet went to war in December 1941. He was responsible for a series of victories against weak opposition, followed by two major defeats at the hands of the USN that stopped Japanese expansion in the Pacific. (Naval History and Heritage Command) treaty restrictions after 1936. However, from 1922 to 1936, the IJN was faced with a difficult challenge to keep its fleet at the required 70 percent ratio while operating under budgetary and treaty restrictions. To accomplish this, the IJN used many innovative ideas, mixed with cheating on treaty restrictions. When Japan began a series of aggressive moves in the region, beginning with its 1931 seizure of Manchuria, the prophecy of the USN becoming an enemy looked more and more accurate.

PRE-WAR PLANS

The IJN adhered to American theorist A. T. Mahan's concepts of naval power. A big part of this was the full acceptance of the decisive battle concept. Determining victory in a war by a decisive engagement was an attractive notion to the IJN since it would probably be unable to engage in a long war against its most likely enemy, the USN. It was not simply fanciful that decisive battles ended wars. In 1905, the battle of Tsushima against the Russians had done just that. Decisive battle theory provided the framework for IJN strategy during the Pacific War and was also the framework behind the navy's construction program before the war.

The consensus that the USN was the IJN's most likely enemy presented Japanese naval planners with a daunting prospect, since the Americans would always be able to produce a larger navy. IJN planners took note that the USN had responsibilities in two oceans, and by fighting a defensive war the USN would have to make a long trek across the Pacific. According to Mahan, a navy operating at extended distances from its main base did so at reduced effectiveness. Thus, as Japanese strategists believed, the IJN only had to be 70 percent as strong as the USN to guarantee success in a decisive engagement.

This decisive engagement was seen as the natural outcome of a naval war between Japan and the United States. A war between the two nations would begin with Japan seizing the American possessions of Guam and the Philippines in the Western Pacific. This would inevitably be followed by an American advance through the Japanese-held islands in the Central Pacific. When the Americans reached the Western Pacific, the IJN would accept action in a naval encounter with the Japanese operating close to home bases and the USN operating at the end of a long supply line. Prior to the decisive battle, the USN's battle fleet would be subjected to prolonged and significant attrition. Japanese submarines would track and attack the American fleet on its westward journey, and Japanese land-based air power operating from bases in the Central Pacific would also execute long-range attacks against the approaching Americans. When the two fleets finally joined in their climactic battle, the IJN expected to have numerical parity with the USN. At this point, the better-trained and better-prepared IJN would execute its elaborate set-piece battle tactics and gain a crushing victory. The battleship remained the central focus of Japanese tactics



Akagi, pictured here in 1939 after modernization, was the most famous of the Combined Fleet's carriers by virtue of being the first Japanese fleet carrier. *Akagi* served as flagship of the *Kido Butai*. (Naval History and Heritage Command)

since it was viewed as the ultimate arbiter of naval power. Using their ability to outrange the enemy, Japanese battleships would deliver punishing blows from long range until they could close in on and destroy the weakened American battlefleet. Within this carefully choreographed engagement, all other fleet components had a role to play.

This decisive battle scenario was played out relentlessly at the Naval Staff College between the wars. Periodically, the insights gained resulted in revisions to the IJN's Battle Instructions. It must be pointed out that at no time did the Pacific War include a decisive engagement in any way similar to that envisioned by the IJN. The dogmatic decisive battle strategy did change when the location of the decisive clash was moved from the Western Pacific to the Central Pacific, and then was discarded altogether when the commander of the Combined Fleet, Admiral Yamamoto Isoruku, decided that he wanted a much more aggressive strategy in 1941. Nevertheless, the decisive battle strategy lingered into the Pacific War as fleet components executed their parts of the decisive battle doctrine against the USN. For the IJN's battle line, the pre-war doctrine was irrelevant since it never had an opportunity to engage its USN counterparts in anything like a decisive battle. For the IJN's carrier force, the pre-war doctrine was of no use when Yamamoto formed all the IJN's fleet carriers into a single operational entity and made it the de facto principal striking arm of the fleet. For the IJN's cruisers and destroyers, the well-rehearsed tactics of the decisive battle were still applicable for engagements early in the war and beyond. For the IJN's submarine force, the pre-war doctrine of trying to attack the USN's fleet units proved to be a path to disaster despite some occasional successes.

EARLY WAR STRATEGY

The road to war between Japan and the Western powers in 1941 is beyond the scope of this book but suffice it to say that Japan found itself in dire straits in mid-1941. The Japanese occupation of French Indochina in July 1941 prompted the United States and other Western powers to impose a total trade embargo on

Japan. Faced with this, Japan could choose either to accede to American demands that it relinquish gains in China and French Indochina or devise a plan to seize the resources it needed by force. The Japanese chose the latter. Thus, Japanese war plans were shaped by economic objectives. The most pressing need was for oil. Since domestic production accounted for 10 percent of requirements, foreign sources had to be found. Ample oil was available in the Netherlands East Indies (NEI) in the oilfields of Borneo, Sumatra, and Java. These oilfields had to be taken quickly and put back into service as soon as possible. In addition to oil, the Japanese economy needed iron, bauxite, manganese, cobalt, graphite, lead, nickel, phosphates, and even food. These could also be found in the NEI, and the British colonies of Malaya and Burma.

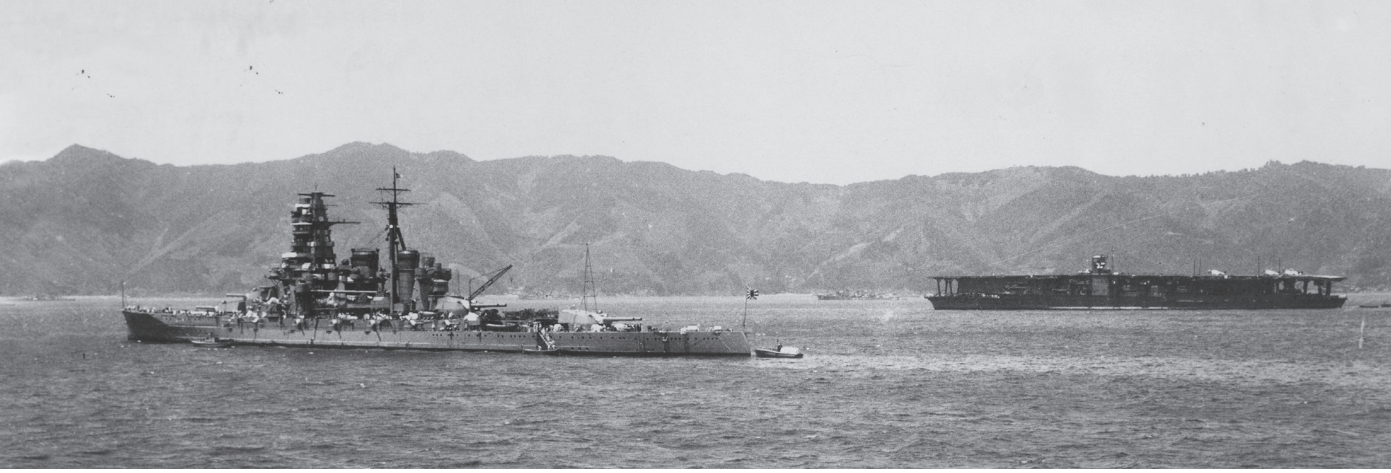
The Japanese believed that an invasion of the NEI and Malaya would bring the United States into the war. This was actually a questionable assumption, but there was solid military logic behind their need to neutralize American military power at the onset of a conflict. The USN's Pacific Fleet, now based in Hawaii, was the only force in the Pacific that could conceivably interfere with Japan's move south into the resource areas it needed. The American-held Philippines posed a real threat to Japanese sea lines of communications to the resource areas in Southeast Asia. This led to the decision to attack the United States.

The Imperial Army and Navy came to an agreement in 1941 on their long-term objectives. After only a few months, Japan needed to seize the areas it required to continue the war and be ready to defend them against counterattack. Ultimately, the Western powers (primarily the United Kingdom and the United States) would agree to end the conflict on terms favorable to Japan. In particular, the Japanese thought the Americans lacked the resolve to continue a pointless struggle to defeat the determined Japanese while having their hands full fighting a war in Europe.

Imperial General Headquarters (composed of staffs from the Army and Navy) foresaw the initial period of war in two operational phases. The first operational phase included the main operations of occupying the Philippines, British Malaya (including Singapore), the NEI, Burma, and Rabaul in the South Pacific. In addition, lesser objectives had to be attacked including the American islands of Wake and Guam, the British-held Gilbert Islands, and British Hong Kong in southern China.

The campaign in Southeast Asia was the most important aspect of this plan. This would develop in three phases. In the first, Thailand would be occupied, and key points in northern Malaya, British Borneo, Sarawak in Dutch Borneo, and the Philippines seized. Second-phase operations required the occupation of Malaya and Singapore, southern Burma, and the northern islands in the NEI. The final phase was the ultimate reduction of the NEI and the seizure of Sumatra and Java, as well as the occupation of the rest of Burma.

The most controversial part of the plan was the decision to attack Pearl Harbor. This was the brainchild of a single man – Yamamoto. Ostensibly a man



The four Kongo-class battleships had the speed to easily operate with the Combined Fleet's carrier strike force. At least two battleships were always present with the carriers. In this view from 1939, *Kirishima* is at anchor with *Akagi* in the background. (Yamato Museum)

who wanted peace with the United States, he now devoted himself to planning how to strike the most devastating blow possible to the Americans. An attack on Pearl Harbor (not a surprise attack since it was to occur only after a declaration of war), offered the possibility of a decisive battle against the USN on the first day of the war. Not only would it cripple the Pacific Fleet as it lay in harbor, but the shock of such a blow would shatter American morale. A devastating attack early in the war might preclude a prolonged war that Yamamoto knew Japan could not win. The attack was risky, and he faced intense opposition from his superiors on the Naval General Staff. With a single-minded determination, and the threat to resign if he did not get his way, Yamamoto finally got his Pearl Harbor plan approved.

The IJN devoted almost the entirety of its strength to conducting this campaign of conquest across the Pacific. Only the battleships were held in reserve so as to be ready when the opportunity for a decisive battle presented itself. The six fleet carriers of the First Air Fleet were allocated to the Pearl Harbor attack. In January 1942, the carriers would be available to support operations in the South Pacific against Rabaul and the following month could support operations in the NEI. The Second Fleet was the backbone of the Southern Expeditionary Force formed to cover the occupation of Malaya and the NEI. The Third Fleet provided the forces to conduct the invasion of the Philippines. The Fourth Fleet, operating from Truk Atoll, was given the responsibility to seize Guam, Wake, and later Rabaul.

The first operational phase developed generally as the Japanese had planned. Once it was complete, the second operational phase could begin. This called for further expansion to stretch Japan's strategic depth to protect those areas seized in the first phase. Second-operational-phase objectives included eastern New Guinea, New Britain, the Aleutian Islands, Midway Atoll, the Fiji and Samoan Islands in the South Pacific, and "strategic points in the Australian area." These objectives remained for the most part unrealized since by this point the IJN was seriously overextended. Yamamoto used the occupation of Midway as an opportunity to force the USN's Pacific Fleet into a decisive battle. With the failure of the Midway operation, the Japanese lost the initiative in the Pacific and were forced on the defensive for the remainder of the war.

FLEET FIGHTING POWER

THE SHIPS

At the start of the Pacific War, the IJN boasted the third largest navy in the world. In December 1941, the IJN was a modern navy, and comprised ships as good as or better than any other navy in the world. Both the USN and RN were larger, but both had global responsibilities. This translated into the IJN having a slight numerical advantage in the Pacific at the start of the war.

Between the wars, a system of naval treaties shaped the size and composition of the world's principal navies. This was especially true with the IJN. By treaty, the IJN was restricted to less tonnage then the USN and RN and was therefore always looking for innovative interpretation (and sometimes willful avoidance) of treaty stipulations to increase its strength. The Washington Navy Treaty of 1922 placed a ten-year holiday on the construction of battleships and battlecruisers. Overall battleship tonnage was restricted to a 5:5:3 ratio (US/UK/Japan); total IJN battleship tonnage was set at 315,000 tons. Battleships could not displace more than 35,000 tons standard displacement and mount guns larger than 16in. Aircraft carriers were also limited by tonnage, with the IJN's limit set at 81,000 tons. Carriers could not displace more than 27,000 tons, but each signatory navy was allowed to convert two battleships or battlecruisers into a carrier as long as they were no more than 33,000 tons. Crucially, the treaty set no restrictions on the number of other warships. The only limit was that these lesser warships were limited to a maximum of 10,000 tons and could not carry guns bigger than 8in. Another very important treaty clause was that all parties agreed not to build any new fortifications in the Pacific region. This guaranteed Japan's dominance in the Western Pacific.

The First London Naval Treaty was signed by five naval powers in 1930. It renewed the restrictions of the Washington Naval Treaty and for the first time added tonnage limitations on all types of naval ship categories. For the IJN, the treaty set limits on cruiser (now broken down into two categories – heavy and light), destroyer, and submarine construction. Beginning in 1935, a second naval conference was held in London to extend the limits of the first London conference. Japan withdrew from the conference in January 1936 and was exempt from treaty restrictions by the end of 1936.

The interwar treaty system influenced almost every ship the IJN went to war with in 1941.

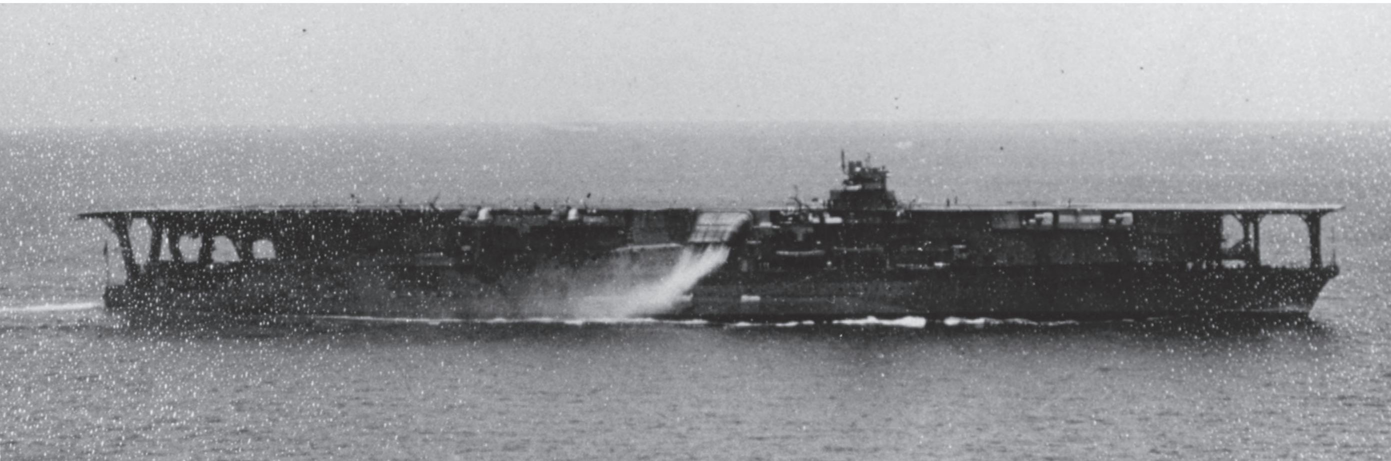
Aircraft Carriers

In December 1941, the IJN possessed the world's largest carrier fleet, and by any calculation, the most powerful. Ten ships were in service, and another two were commissioned by May 1942.

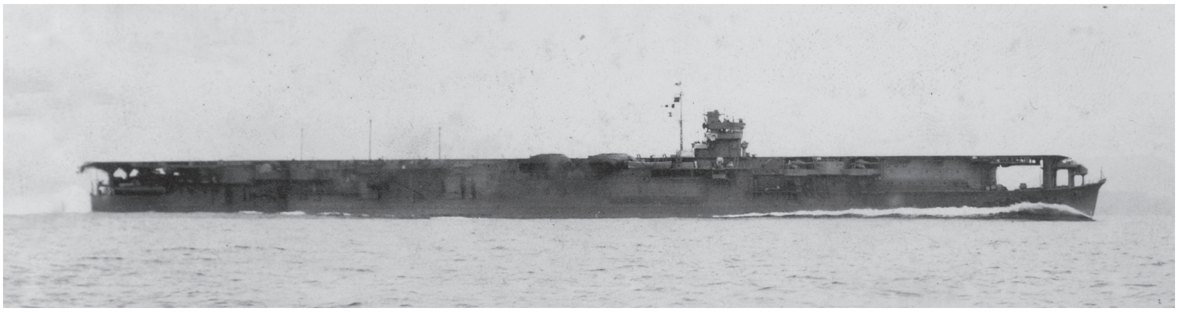
Hosho was the IJN's first carrier, being commissioned in December 1922. However, by the start of the war the carrier was of marginal usefulness except for training duties. *Akagi* was the IJN's first fleet carrier, converted from a battlecruiser using the exemption provided by the Washington Naval Treaty. First commissioned in 1927, *Akagi* was reconstructed in 1935–38 when the two lower flight decks were removed. In 1941, armament included ten 8in guns in hull casemates, 12 4.7in guns in twin mounts, and 14 25mm antiaircraft guns. *Akagi* was selected as the *Kido Butai*'s flagship because of its size, speed, aircraft capacity, and range.

IJN AIRCRAFT CARRIERS, DECEMBER 1941–JUNE 1942

Ship	Standard displacement (tons)	Dimensions in feet (length/beam/draft)	Maximum speed (knots)	Aircraft capacity (operational)
Hosho	7,470	552/59/20	25	11
Akagi	36,500	855/102/29	31	63
Kaga	38,200	812/107/31	28	72
Ryujo	10,600	590/68/23	29	30
Soryu	15,900	746/70/25	34.5	57
Hiryu	17,300	746/73/26	34.5	59
Shokaku, Zuikaku	25,675	844/85/29	34.25	72
Zuiho, Shoho	11,262	674/60/22	28	30
Taiyo	17,830	591/74/26	21	27
Junyo	24,140	718/88/27	25.5	48



Converted from a battleship, *Kaga* was a slower version of *Akagi* with a slightly larger aircraft capacity. Early Japanese carriers were designed with small islands. Exhaust was vented downward through stacks along the side of the ship. (Naval History and Heritage Command)



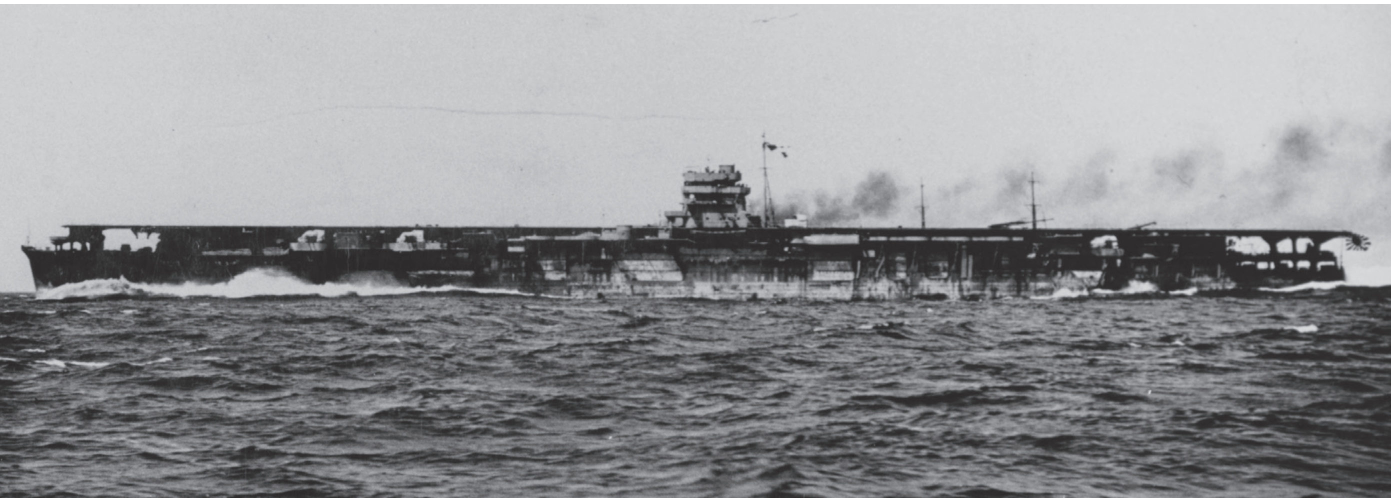
Soryu was the first Japanese fleet carrier designed as such from the keel up and epitomized the IJN's emphasis on offensive capabilities, carrying three squadrons of aircraft on a fast hull with a minimum of protection. (Yamato Museum)

The sistership of *Akagi*, battlecruiser *Amagi*, was also intended to be converted into a carrier, but was badly damaged in the 1923 Tokyo earthquake. The unfinished battleship *Kaga* was substituted. First commissioned in 1928, *Kaga* also underwent reconstruction in 1934–35. In 1941, the battleship was armed with eight 5in dual-purpose twin mounts and 30 25mm antiaircraft guns; *Kaga* was paired with *Akagi* to form the elite Carrier Division 1.

Ryujo provided one of the many examples of the IJN attempting to avoid treaty restrictions. The original design called for a ship of 8,000 tons (carriers under 10,000 tons were exempt from treaty calculations) carrying 24 aircraft. The IJN was not content with a carrier with so few aircraft, so it added a second hangar deck to double the aircraft capacity. This brought displacement to some 12,500 tons – clearly over treaty limits. The extra weight created severe stability issues, which required two major yard periods to correct. By the start of the war, *Ryujo* was a useful addition to the IJN's carrier force. The carrier was armed with eight 5in dual-purpose guns and 22 25mm antiaircraft guns.

Soryu was the IJN's first fleet carrier designed as such from the keel up. Fast, lightly protected, and carrying a large air group, *Soryu* epitomized the IJN's offensive mindset. Commissioned in 1937, *Soryu* carried 12 5in dual-purpose guns and 28 25mm antiaircraft guns. *Hiryu* was a near sister of *Soryu* but with an additional 1,400 tons in displacement for extra stability and protection. Commissioned in 1939, *Hiryu* carried 12 5in dual-purpose guns and 31 25mm antiaircraft guns. The IJN was happy with *Hiryu*'s design and made it the basis for most subsequent fleet carrier designs. *Soryu* and *Hiryu* formed Carrier Division 2.

Hiryu was an improved version of *Soryu*. The carrier's design was so successful it was used as the basis for the even more successful Shokaku class and the subsequent Unryu class. (Naval History and Heritage Command)



Shokaku pictured after completion in August 1941. The addition of these balanced ships represented a major addition to the Combined Fleet's carrier force in the last few months preceding the war. (Naval History and Heritage Command)

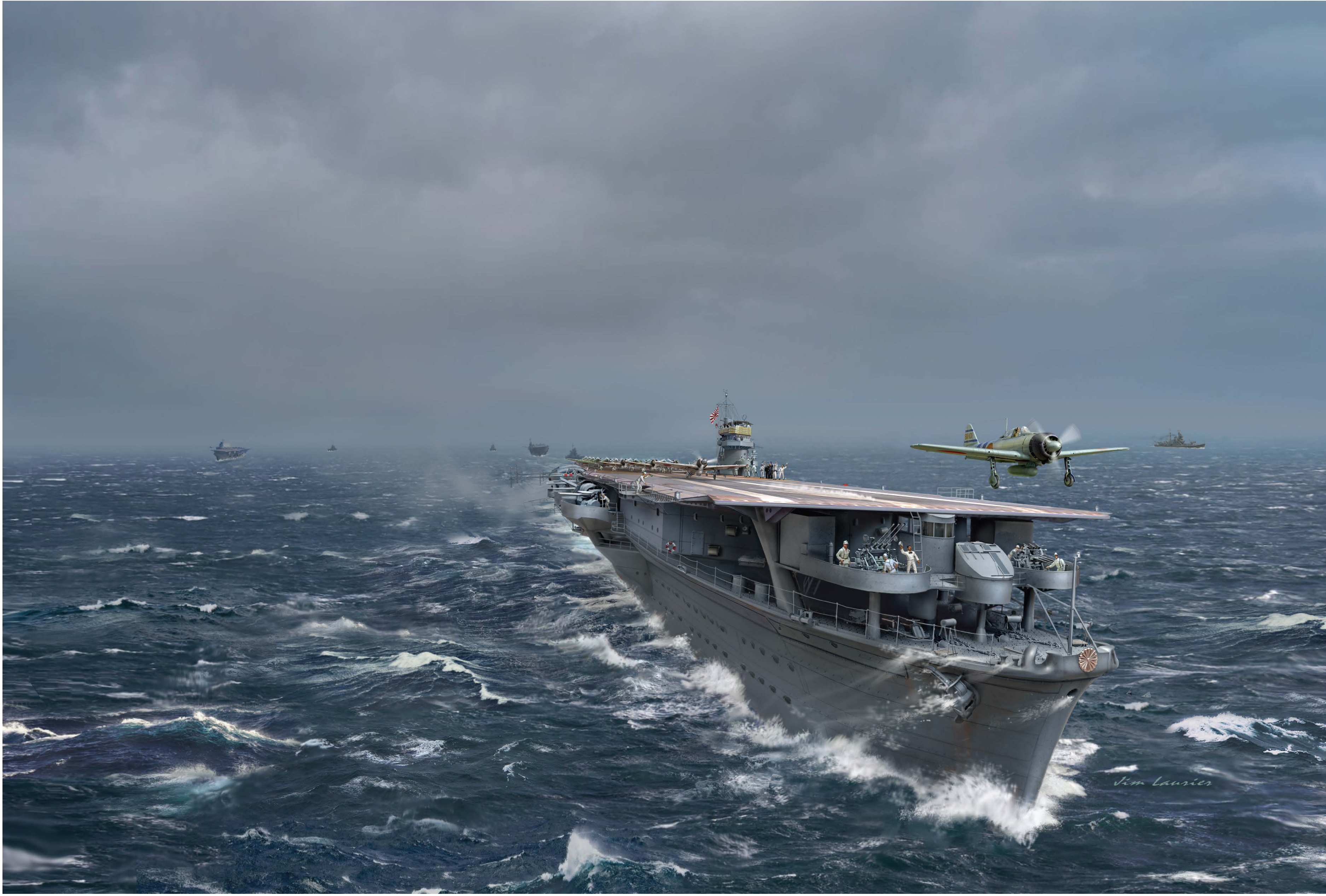
The final two IJN fleet carriers to enter service before the war were the two ships of the Shokaku class. Designed without any treaty restrictions, *Shokaku* and *Zuikaku* were excellent ships with a fine balance of protection, speed, and striking power. At the start of the war, they were the best designed and most modern carriers in the world. Both were commissioned in 1941 and carried 16 5in dual-purpose guns and 31 25mm antiaircraft guns. They formed Carrier Division 5.

Another method for the IJN to circumvent treaty restrictions was to create a shadow fleet of auxiliaries and merchant ships designed to be easily converted into carriers. The first attempt at building such ships was in 1934–35 when two ships were laid down as submarine tenders. *Zuiho* was commissioned as a carrier in December 1940, and *Shoho* followed in January 1942. These ships proved useful in service, each with an aircraft capacity of 30. They were relatively fast but were unprotected.

Like the USN, the IJN invested in escort carriers. Unlike USN escort carriers, IJN escort carriers were not fitted with catapults, which restricted their operational usefulness. Early in the war, they were used primarily as aircraft transports. The first IJN escort carrier was *Taiyo*, commissioned in 1941. Two more sister ships followed in 1942.

DESTINATION PEARL HARBOR (overleaf)

This scene shows a portion of the *Kido Butai* beginning to launch aircraft on December 7, 1941 just before 0615hrs. The morning was marked by a moderate wind which helped the launch of the first attack wave and a heavy swell that made the carriers roll heavily – between 7 and 16 degrees, depending on the type of ship. The six carriers were formed into a box formation. In the foreground is *Hiryu*; on the deck is the first-wave strike of 24 aircraft. Note that the island is on the port side. Only *Hiryu* and *Akagi* were ever fitted with a port-side island. Ranged in the lead on the flight deck are six Type 0 fighters; behind them are 18 Type 97 carrier attack aircraft. Of these, ten were fitted with special 1,760lb bombs that had the ability to penetrate battleship armor. One of *Hiryu*'s aircraft dropped the bomb that shattered the battleship *Arizona* and caused a huge loss of life. The other eight Type 97s are carrying Type 91 torpedoes that are targeted against the American carriers usually moored on the western side of Ford Island. In the distance is carrier *Kaga*. Being much larger than *Hiryu*, *Kaga* embarked a larger air group and contributed more aircraft to the first wave. Nine Type 0 fighters were positioned forward and behind them are 27 Type 97s. Of the 15 carrying the large armor-piercing bombs, one aborted and did not take part in the attack. The other 12 aircraft carried torpedoes. All of *Kaga*'s carrier attack aircraft were targeting Battleship Row.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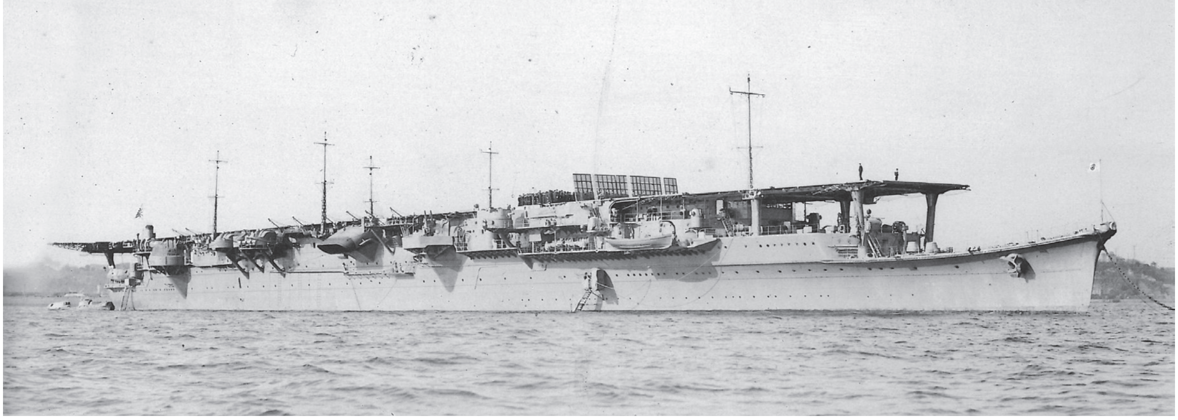


Shoho, shown here on December 20, 1941, was originally designed as a high-speed oiler, but was completed as a submarine tender. The real purpose was to provide the hull for a quick conversion into a light carrier. *Shoho* and sister ship *Zuiho* were useful additions to the fleet with their capacity to carry 30 aircraft. (Yamato Museum)

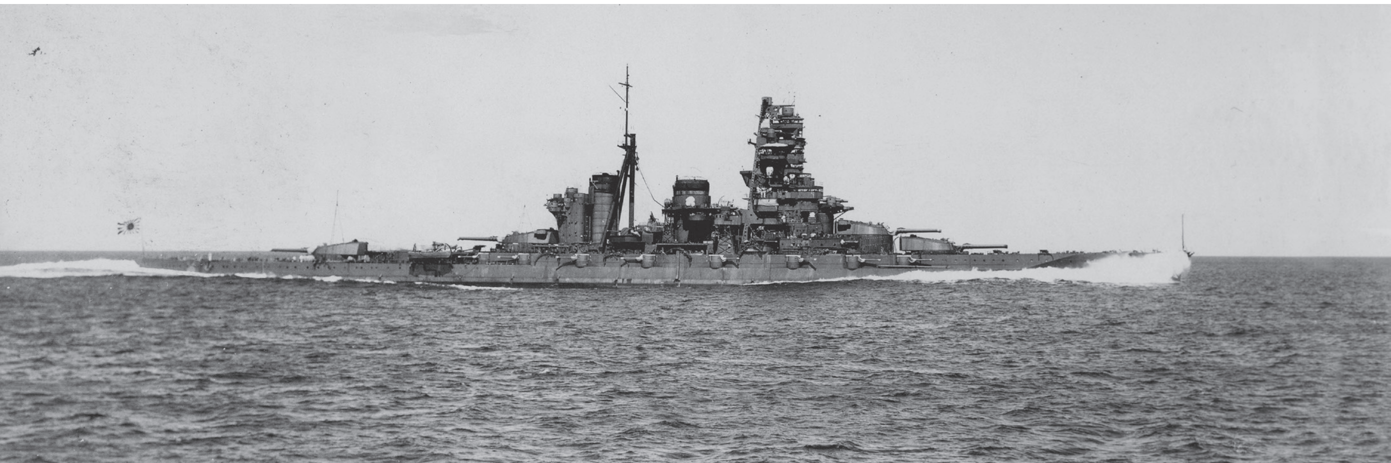
This view of *Haruna*, another of the four Kongo-class fast battleships, betrays the battleship's World War I origins. Despite being heavily modernized between the wars, the ship was not comparable in protection or firepower to USN battleships of the period. (Yamato Museum)

Another method to get carriers into service fairly quickly was to convert large passenger liners. The IJN requisitioned Japan's two largest liners for this purpose in February 1941. *Junyo* was commissioned in May 1942 and sistership *Hiyo* was completed in July. These were not ideal carriers since they were relatively slow and carried minimum protection, but their large aircraft capacity made them useful additions to the fleet. Armament consisted of 12 5in dual-purpose guns and 24 25mm antiaircraft guns.

Battleships

At the start of the Pacific War, the IJN possessed a battle line of ten battleships. All had been completed during or immediately after World War I, and all had been modernized between the wars. Because of treaty restrictions, the IJN did not begin construction on a new battleship until 1937 when superbattleship *Yamato* was laid down. With the exception of *Yamato*, Japanese battleship designs generally favored speed over protection. All IJN battleships possessed the highest degree of firepower possible in keeping with the IJN's offensive mindset.

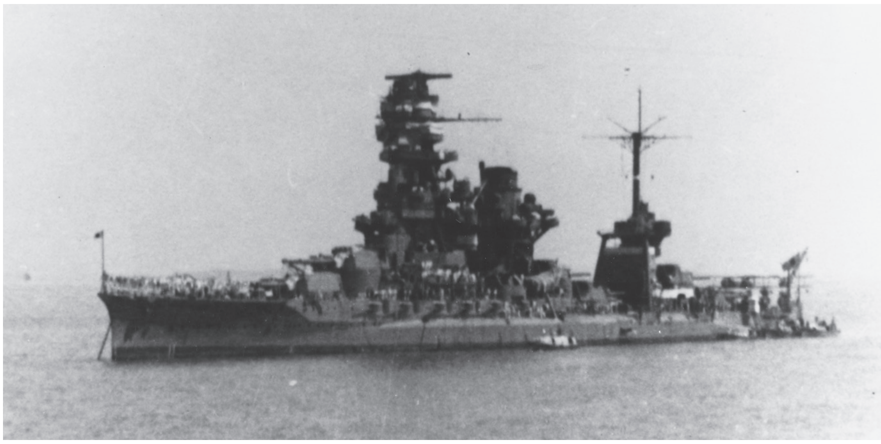
The oldest of the IJN's battleships were the four ships of the Kongo class. These were laid down as battlecruisers beginning in 1911. The lead ship, *Kongo*, was the last major Japanese warship built in a foreign yard. *Hiei*, *Haruna*, and *Kirishima* were the first modern dreadnoughts built in Japan. As battlecruisers, they were fast, but possessed inadequate protection. Modernization between



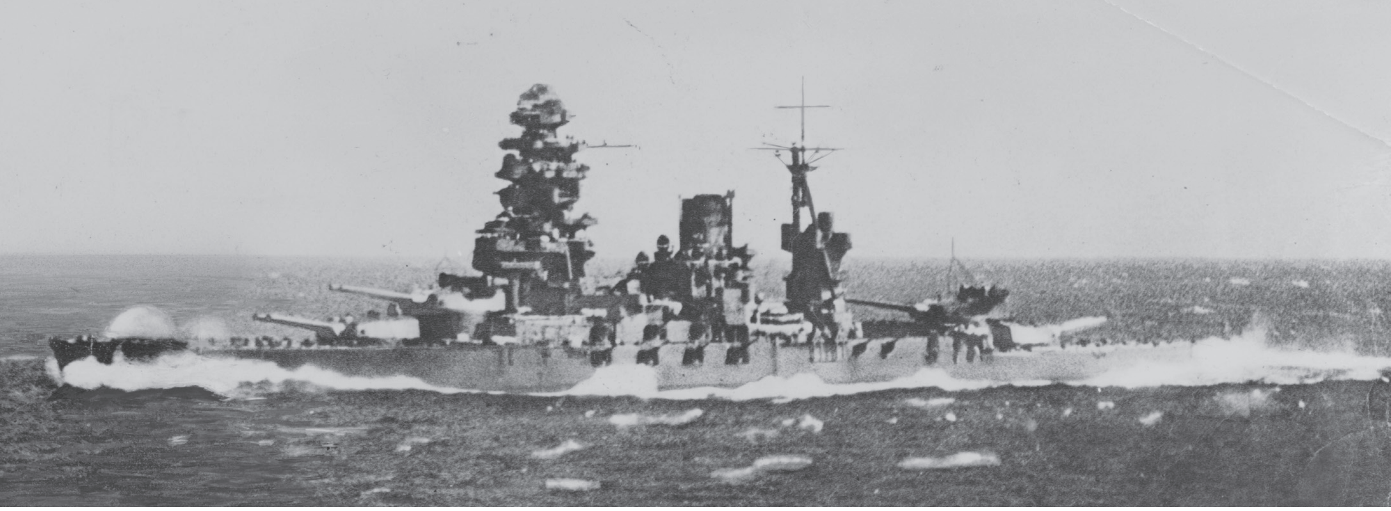
Designed to be the most powerful battleships afloat when they were launched, the Fuso class was obsolescent by the start of the Pacific War. Note the main battery of 12 14in guns in six turrets. (Naval History and Heritage Command)

the wars improved their protection and increased their speed, making them fast battleships. However, even with their additional armor, overall protection remained inadequate compared to foreign battleships. The Kongo class was highly regarded by the IJN because of its high speed and firepower. During the first part of the war, these were by far the most active Japanese battleships since they had the necessary speed to operate with the carriers.

The first modern IJN battleships were the two ships of the Fuso class. *Fuso* entered service in 1915, followed by *Yamashiro* two years later. When commissioned, they were the largest and most powerful battleships in the world. In the 1930s, they underwent modernization, but this was only partly successful in addressing their principal weakness, which was protection and in particular underwater protection. At the start of the war, the two Fuso-class units were the least-capable IJN battleships. Compared to contemporary USN battleships, they were similarly armed, faster, but much less well-protected.



Ise, pictured here in 1939 in Chinese waters, was an improved version of the preceding Fuso class. *Ise* was inferior to comparable USN battleships in terms of protection, but equal in firepower and superior in speed. (Naval History and Heritage Command)



This excellent beam view of *Mutsu* was taken before the war. *Mutsu* and *Nagato* were the heart of the Combined Fleet's battle line. Note the main battery of eight 16in guns in four turrets and the powerful secondary battery in casemates. (Naval History and Heritage Command)

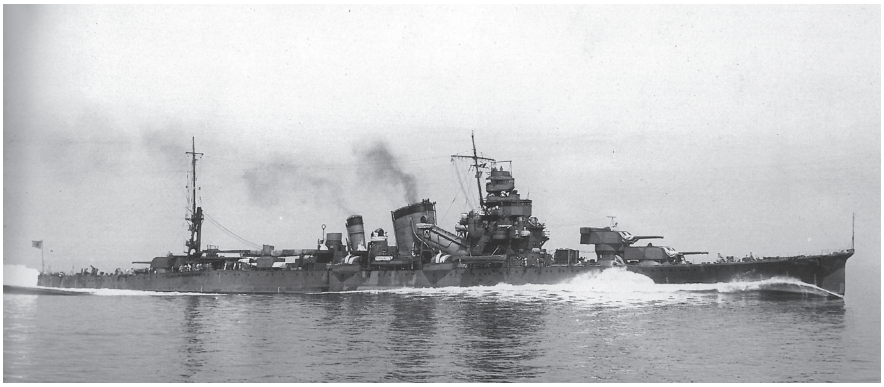
IJN BATTLESHIPS, DECEMBER 1941–JUNE 1942

Class	Standard displacement (tons)	Dimensions in feet (length/beam/draft)	Maximum speed (knots)	Protection (inches)	Main/secondary batteries
Kongo	32,056	739/95/32	30	Belt: 8 Horizontal: 4.75	8× 14in/14× 6in
Fuso	34,700	698/101/32	25	Belt: 12 Horizontal: 4	12× 14in/14× 6in
Ise	35,800	708/104/30	25.3	Belt: 12 Horizontal: 4.7	12× 14in/16× 5.5in
Nagato	39,130	734/108/31	25	Belt: 12 Horizontal: 8.1	8× 16in/18× 5.5in
Yamato	62,315	862/121/36	27.5	Belt: 16 Horizontal: 9.1	9× 18.1in/12× 6.1in

First intended as a repeat of the Fuso class, the next two IJN battleships were so heavily modified that they became a new class. *Ise* was commissioned in 1917 and *Hyuga* followed in 1918. In spite of the many refinements, the basic configuration was similar to the Fuso class, and the ships had the same strengths and weaknesses. Both ships were modernized between 1934 and 1937; these modifications resulted in slight enhancements of speed and protection, while leaving firepower unaltered.

The IJN's next class of battleships was designed with the goal of producing a ship qualitatively superior to any other battleship in the world. When commissioned in November 1920, the lead ship, *Nagato*, was the first battleship to carry 16in guns. The ships were also much faster than most battleships of the day at 26.5 knots. Protection was good, though still inferior to USN battleships of the period. *Mutsu* followed in 1921. Both were modernized from 1934 to 1936, which improved underwater and horizontal protection but at the cost of lower speed. These ships were the backbone of the IJN's battle line until the arrival of *Yamato*.

Once Japan renounced the existing naval treaties, the IJN was free to build a battleship with an immense displacement. This allowed Japanese designers to make few compromises in the competing areas of protection, firepower, and



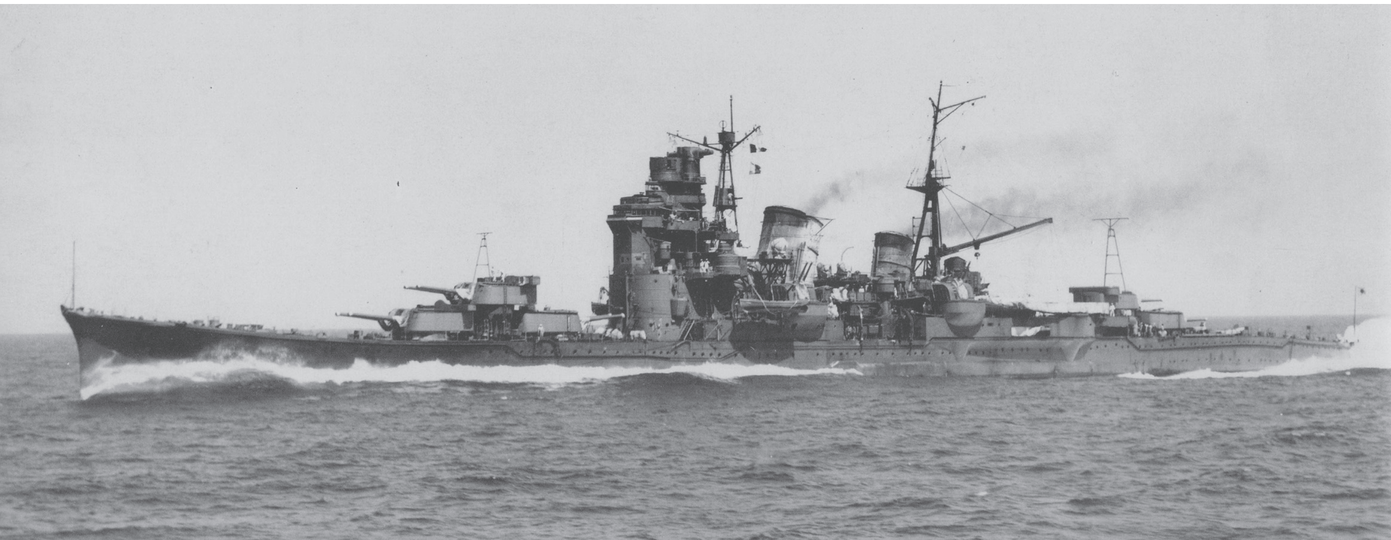
The first modern Japanese cruisers (later classified as heavy cruisers) were the two Furutaka-class ships. This is *Furutaka* pictured in 1939 after modernization. Though not as powerful as the IJN's Treaty cruisers, they were still useful ships with a main battery of six 8in guns and a heavy torpedo battery. (Yamato Museum)

propulsion. The result was as the IJN had intended – a ship so powerful that it created a qualitative overmatch against any USN battleship either in service or likely to enter service. This calculus of creating a qualitative edge was the IJN's response to the fact that the USN would always have a quantitative advantage.

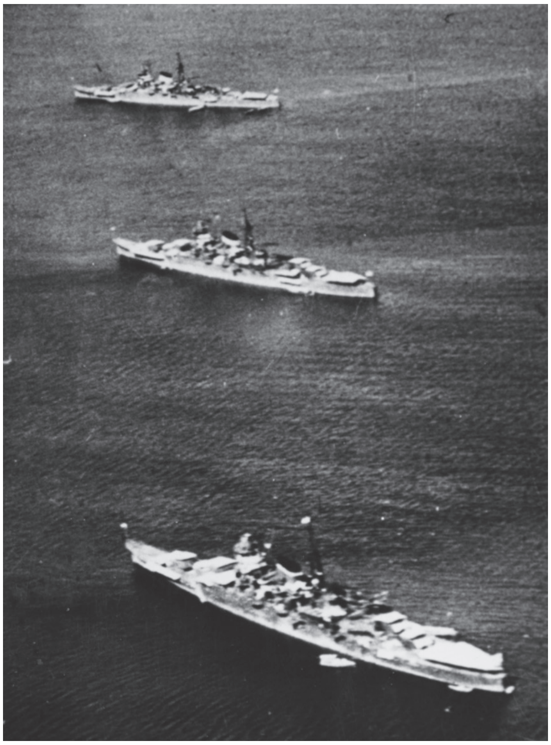
Yamato was laid down in 1937 and commissioned just after Pearl Harbor. When the battleship entered service, it was the most massively armored ship ever and the only battleship to carry 18.1in guns. Speed was a respectable 27.5 knots. Aside from the immense cost of production, and the inherent vulnerability of battleships to modern air power, *Yamato* had few weaknesses. Unfortunately for the IJN, the era of the battleship had ended, and *Yamato* was immediately obsolete on commissioning. Sistership *Musashi* entered service in August 1942.

Heavy Cruisers

The IJN had 18 heavy cruisers in service at the start of the war. Heavy cruisers were an integral part of the IJN's war-fighting doctrine, particularly in night fighting. While most Japanese battleships sat in reserve during the first six months of the war, Japanese heavy cruisers were active throughout the Pacific and Indian oceans. The drive into the NEI was spearheaded by the IJN's powerful heavy cruisers. Most IJN heavy cruisers were over their treaty tonnage



Myoko was the lead ship in the IJN's first class of Treaty cruisers. The four ships of the Myoko class set the standard for future Japanese heavy cruisers with their heavy firepower, high speed, and ability to take punishment. They were superior to USN and RN Treaty cruisers, assisted significantly by the IJN's willful decision to build above the 10,000-ton limit. (Yamato Museum)



Mogami and sister ships *Mikuma* and *Kumano* photographed in 1938. Though not apparent in this view, the ships carried 15 6in guns, making them light cruisers. Between September 1939 and April 1940, they exchanged their 6in guns for 8in guns. (Naval History and Heritage Command)

limits, thus giving their designers a better opportunity to produce balanced ships than their USN and Royal Navy counterparts.

The Furutaka and Aoba classes were in development before the Washington Naval Treaty came into effect. As such, they actually displaced less than the treaty's 10,000-ton limit, the only IJN heavy cruisers to do so. From the start, they were designed with high speed, a heavy armament on a fairly small hull, and were lightly protected. Part of their offensive punch was the inclusion of a heavy torpedo battery. All IJN heavy cruisers also carried reloads for their torpedo tubes. All of these characteristics became hallmarks in subsequent IJN heavy cruiser designs. All IJN heavy cruisers also carried floatplanes for scouting and to assist in night fighting. The four ships of these two classes were very similar. *Furutaka*, *Kako*, *Aoba*, and *Kinugasa* were commissioned in 1926–27, and all were modernized before the war.

The Myoko class was the first IJN class of heavy cruisers designed under treaty restrictions. The original design comported with the 10,000-ton limit, but after the Naval General Staff added more weapons, the design was well overweight. This, more than anything else, accounted for the IJN's ability to produce such powerful and balanced cruisers and still appear to adhere to treaty limits. The four ships in service were *Myoko*, *Nachi*, *Ashigara*, and *Haguro*.

The Takao class, commissioned in 1932, was an improved Myoko class, though by the start of the war, after modernization, the two classes were essentially identical in terms of firepower and protection. Ships in the class included *Takao*, *Atago*, *Maya*, and *Chokai*.

IJN HEAVY CRUISERS, DECEMBER 1941–JUNE 1942

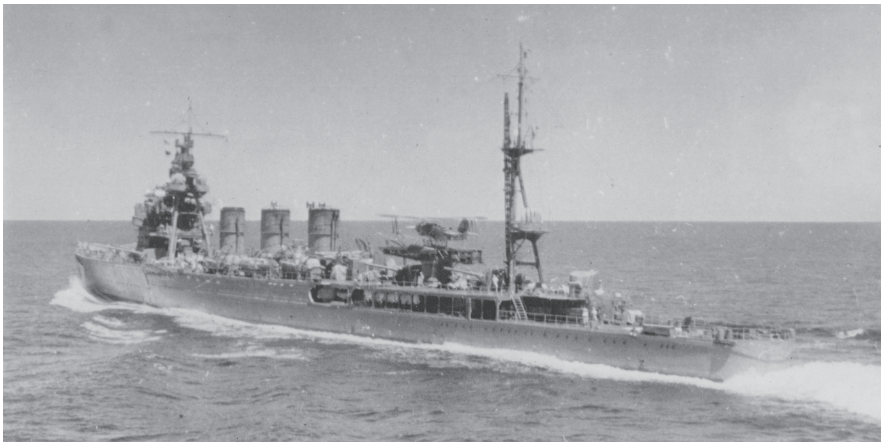
Class	Full load displacement (tons)	Dimensions in feet (length/beam/draft)	Maximum speed (knots)	Protection (inches)	Main battery/number of torpedo tubes
Furutaka/Aoba	11,273	608/56/33	33–34	Belt: 3 Horizontal: 3.3	6× 8in/8 (with 8 reloads)
Myoko	15,933	669/68/36	33	Belt: 4 Horizontal: 3	10× 8in/16 (with 18 reloads)
Takao	15,186-15,641	669/67/36	35.5	Belt: 4 Horizontal: 3	10× 8in/8–16 (with 16 reloads)
Mogami	15,057	669/68/36	35	Belt: 4 Horizontal: 3	10× 8in/12 (with 6–12 reloads)
Tone	15,239	661/64/36	35	Belt: 5.7 Horizontal: 3.4	8× 8in/12 (with 12 reloads)

The First London Naval Treaty restricted the IJN to 12 heavy cruisers. To get around this, the IJN built a class of large light cruisers with a supposed tonnage of 8,500 tons and the capability to be easily upgraded from a main battery of 6.1in to the standard heavy cruiser 8in gun battery. Trying to fit the IJN's customary combination of a heavy gun and torpedo battery into a hull capable of high speed was impossible on the 8,500-ton limit, so this was changed to 9,500. Even this increase resulted in ships that were severely top-heavy. This required extensive modification and a final result that was 1,800 tons over design displacement. After the Japanese withdrew from the naval treaties, the IJN made plans to upgrade the cruisers with 8in guns. The eventual result was a class of ships, consisting of *Mogami*, *Mikuma*, *Suzuya*, and *Kumano*, which was well-protected, heavily armed, and very fast.

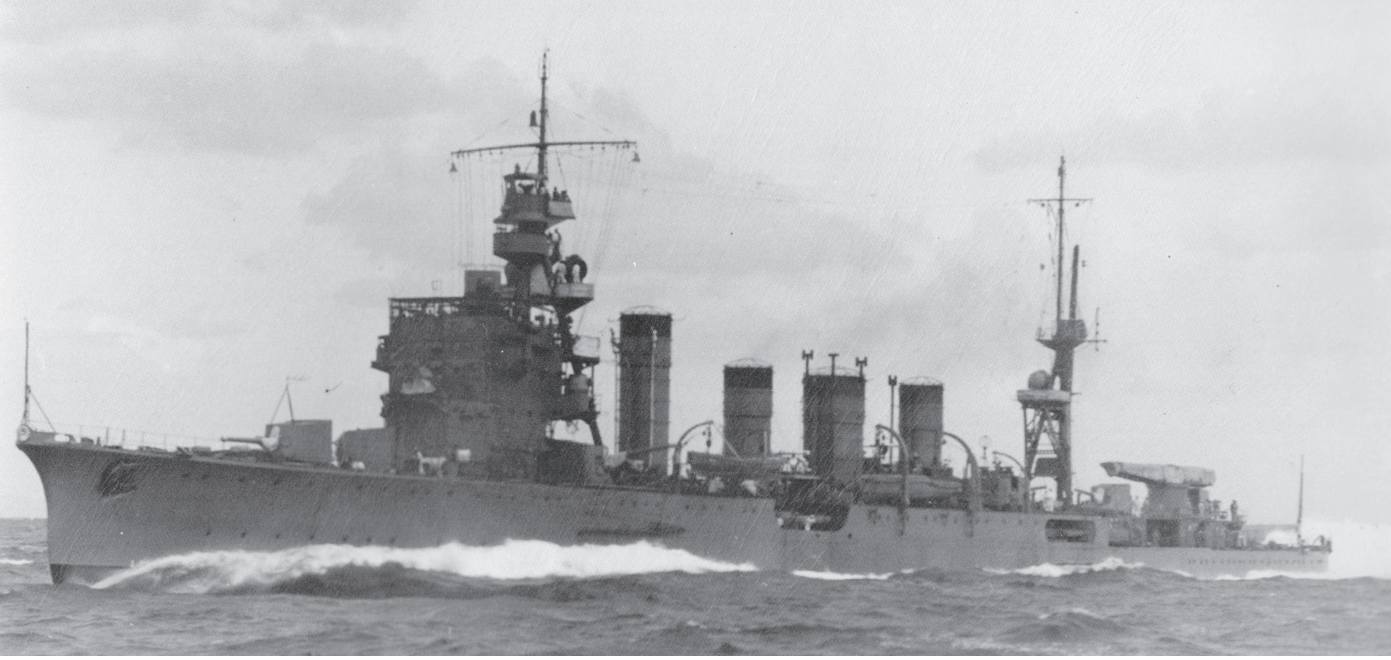
The Tone class (consisting of *Tone* and *Chikuma*), were the IJN's best protected heavy cruisers. Like the preceding Mogami class upon which it was based, the Tone class was originally designed as a light cruiser but was upgunned with 8in guns after Japan withdrew from the naval treaties. Significantly, this class placed all four of its twin 8in turrets forward of the superstructure leaving the entire stern area for aircraft handling. Each ship could carry five seaplanes. The class was highly regarded by the IJN.

Light Cruisers

The IJN began the war with 17 light cruisers and three cruiser-sized training ships. Most of these (14) were 5,500-ton cruisers designed to act as destroyer squadron flagships. All Japanese light cruisers were lightly armed (by foreign standards), carrying guns no larger than 5.5in, but these ships did carry torpedo batteries. After the London Naval Treaty came into effect in April 1930, the IJN began to build heavily armed and better protected light cruisers comparable to USN and Royal Navy designs. As soon as Japan left the naval treaty system, these were all converted to heavy cruisers. The IJN preferred the superior hitting power and range of the 8in gun.



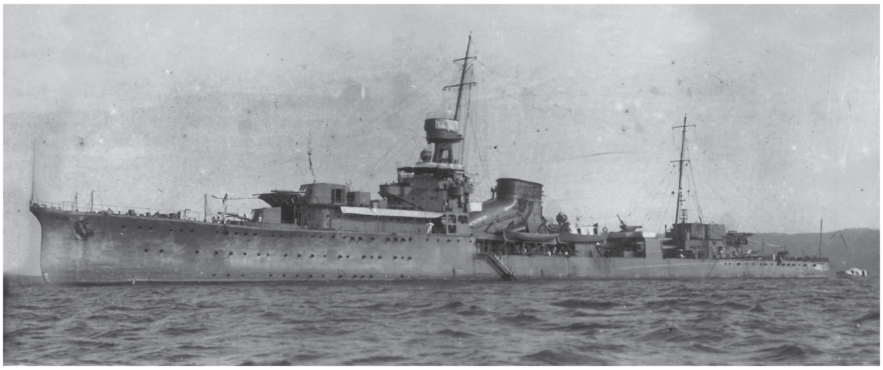
The most modern of the six Nagara-class light cruisers was *Abukuma*, pictured here on December 7, 1941 participating in the Pearl Harbor operation. Note the single 5.5in mounts and the Type 94 reconnaissance floatplane, which had an important role in Japanese night-fighting tactics. (Yamato Museum)



The most modern of the IJN's so-called 5,500-ton cruisers were the three ships of the Sendai class. This is *Jintsu*, showing its antiquated design before the war. Japanese light cruisers were not intended to be platforms for the largest number of 6in guns possible, as was the case for USN and RN light cruisers, but were designed to be flagships for destroyer flotillas. In this specialized role, they performed satisfactorily. (Yamato Museum)

The first modern IJN light cruisers were laid down in 1917. These were the two ships of the Tenryu class (*Tenryu* and *Tatsuta*). This first effort at designing a light cruiser was a failure since the ships were too small, thus unable to carry a heavy main battery, and were much slower than the destroyers they were intended to lead. By 1941, they were second-line units.

The weaknesses of the Tenryu class were immediately apparent, so the Japanese decided that the displacement of the next three classes of light cruisers would be increased to 5,500 tons (normal displacement – an IJN measure different from standard displacement used in treaty calculations). This permitted the incorporation of many improvements, primarily in speed and firepower, which made them much more able to perform in their intended mission as squadron leaders. The first 5,500-ton ships were the five ships of the Kuma class. The lead ship was laid down in 1918, and was followed by *Tama*, *Kiso*, *Oi*, and *Kitakami*. Their main battery consisted of seven 5.5in guns, all single mounts. The torpedo battery was increased to eight tubes, all with reloads. Of note, before the war, *Oi* and *Kitakami* were modified into torpedo cruisers. In this role, they were expected to play an important wartime role in the IJN's doctrine of firing



Yubari was an experimental cruiser designed to fit the armament of a 5,500-ton cruiser on a hull of only 2,900 tons. Though successful in this regard, the design was not repeated since Special Type destroyers introduced only a few years later were even more heavily armed. (Yamato Museum) massed torpedo barrages. Each ship retained its four forward 5.5in mounts, but then had ten quadruple torpedo mounts fitted aft of the superstructure.

IJN LIGHT CRUISERS, DECEMBER 1941–JUNE 1942					
Class	Standard displacement (tons)	Dimensions in feet (length/beam/ draft)	Maximum speed (knots)	Protection (inches)	Main battery/ number of torpedo tubes
Tenryu	3,230	468/41/25	33	Belt: 2.4 Horizontal: 1.4	4× 5.5in/6 (with no reloads)
Kuma	5,100	532/47/29	36	Belt: 2.5 Horizontal: 1.1	7× 5.5in/8 (with 8 reloads); *Oi* and *Kitakami* 4× 5.5in guns/40 (with no reloads)
Nagara	5,170	532/47/29	36	Belt: 2.5 Horizontal: 1.1	7× 5.5in/8 (with 8 reloads)
Sendai	5,595 (normal)	532/47/29	35	Belt: 2.5 Horizontal: 1.1	7× 5.5in/8 (with 8 reloads)
Yubari	3,141 (normal)	458/40/24	35.5	Belt: 2.2 Horizontal: 1.6	6× 5.5in/4 (with 4 reloads)

The largest class of 5,500-ton cruisers were the seven ships of the Nagara class. The lead ship was laid down in 1920; other members of the class included *Isuzu*, *Natori*, *Yura*, *Kinu*, and *Abukuma*. These were virtual repeats of the Kuma class but had a larger bridge. The final three 5,500-ton units comprised the Sendai class. *Sendai* was laid down in 1922 and was followed by *Jintsu* and *Naka*. The basic 5,500-ton configuration was retained, but some internal differences required the addition of a fourth stack, making these ships easy to recognize. Before the start of the war, *Jintsu* and *Naka* (as well as Nagara-class unit *Abukuma*) was modified to operate Type 93 torpedoes.

The final light cruiser was another example of IJN attempts to work around treaty restrictions. Commissioned in 1923, *Yubari* was an experimental design with the intent of creating a ship with the heaviest possible armament and highest speed on the smallest possible displacement. The final result must be judged a success since it featured the same broadside (six 5.5in guns and four torpedo tubes) as the larger 5,500-ton cruisers. Part of this success was attributable to the fact that the design was more than 400 tons over what the Japanese declared for treaty purposes.

Destroyers

Because of the IJN's almost mythical belief in night fighting, and its reliance on torpedoes to shatter an enemy formation before the climactic part of a decisive battle, the destroyer was a major component of the IJN. These ships were designed around the requirement that they carry a heavy torpedo battery for use against the enemy's battle line. This translated into Japanese destroyers that were maximized for surface engagements at the expense of other missions. Accordingly, Japanese destroyers were deficient as antisubmarine and antiair platforms. In the first few months of the war, these weaknesses were not revealed, but this changed dramatically as the war progressed.

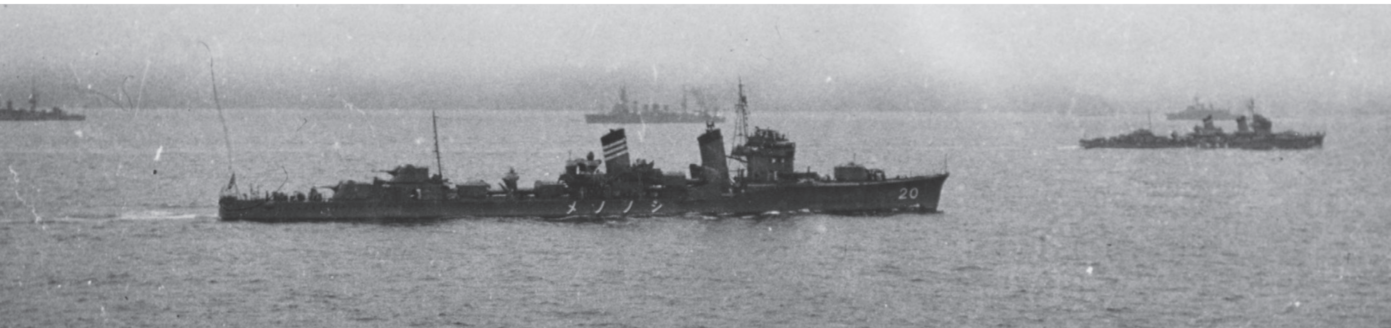
IJN destroyers were divided into three categories. Firstly, several classes of second-class destroyers were still in service in 1941, but these were devoted to missions in Chinese waters or as convoy escorts. Secondly, immediately after World War I, the IJN built three classes of large destroyers totaling 36 ships. Until the advent of the Special Type destroyer in 1928, these ships were the backbone of the IJN's destroyer force. However, they were dated by 1941 and employed in secondary areas. Thirdly, beginning with the Special Type (Fubuki class) destroyers, the IJN brought a series of world-class destroyers into service.

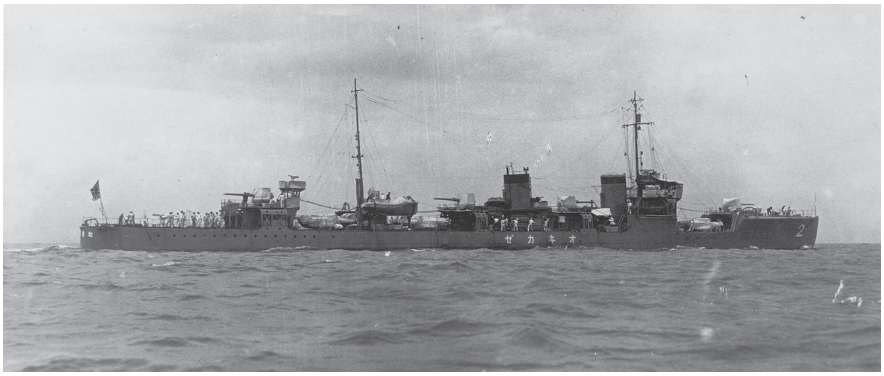
The first modern IJN destroyers were based on British and German designs. The template for these ships was the Minekaze class, which entered service beginning in 1920. The ships possessed a high maximum speed and were armed with four 4.7in centerline guns and three twin torpedo tubes. Like all IJN destroyers, they carried no armor. Before the war, two were converted into destroyer transports, one into an aircraft rescue ship, and the other 12 into antisubmarine (ASW) escorts. The Kamikaze class was based on the preceding class with only minor improvements. Armament remained the same. Of the nine ships in the class, all were retained as destroyers at the start of the war. In 1925, the Mutsuki class began to enter service. This was the first design produced under the influence of the Washington Naval Treaty. This required a heavier torpedo fit to compensate for the IJN's inferiority in battleships. Accordingly, the Mutsuki class was the first IJN destroyer to carry 24in torpedo tubes and the first to carry reloads. All 12 ships were active as destroyers at the start of the war.

IJN DESTROYERS, DECEMBER 1941–JUNE 1942

Class (and number in service, Dec 1941)	Standard displacement (tons)	Dimensions in feet (length/beam/draft)	Maximum speed (knots)	Main battery/number of torpedo tubes
Minekaze (15)	1,345	337/30/10	39	4× 4.7in/6 (original fit)
Kamikaze (9)	1,400	337/30/10	37	4× 4.7in/6
Mutsuki (12)	1,315	337/30/10	33	4× 4.7in/6 (with 6 reloads)
Fubuki (19)	1,750	389/34/11	35	6× 5in/9 (with 9 reloads)
Akatsuki (4)	1,680	389/34/11	38	6× 5in/9 (with 9 reloads)
Hatsuharu (6)	1,490	359/33/10	36.5	5× 5in/6 (with 6 reloads)
Shiratsuyu (10)	1,685	353/33/12	34	5× 5in/8 (with 8 reloads)
Asashio (10)	1,961	388/34/12	35	6× 5in/8 (with 8 reloads)
Kagero (19)	2,033	389/36/12	35	6× 5in/8 (with 8 reloads)
Yugumo (1)	2,077	391/36/12	35	6× 5in/8 (with 8 reloads)

Shinonome was a member of the first group of Special Type destroyers to be commissioned and was also the first Special Type destroyer to be sunk, being bombed by Dutch aircraft in December 1941. Note the three twin 5in mounts and the three triple 24in torpedo mounts. (Naval History and Heritage Command)





Okikaze was a member of the Minekaze class and was typical of the IJN's three oldest destroyer classes before the war. The ship's main battery of four 4.7in single mounts and three twin torpedo mounts are all visible. Before the war, Japanese destroyers carried their names on the hull and the number of their parent destroyer division on the bow. (Yamato Museum)

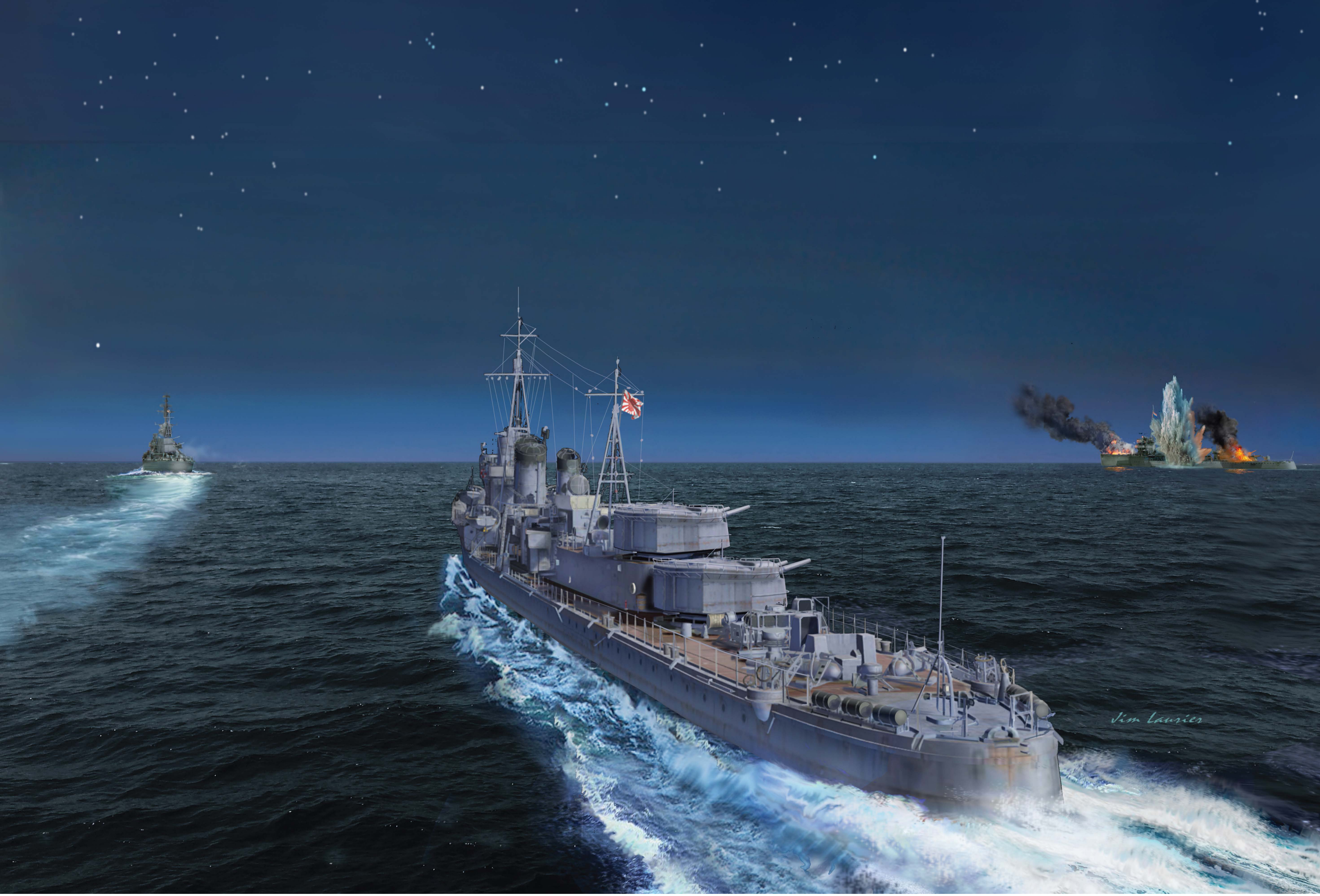
JAPANESE DESTROYERS AT THE BATTLE OF BADOENG STRAIT (overleaf)

One of the few occasions that Allied naval forces had a chance to inflict a defeat on the Japanese was when they targeted Bali Island, located just to the east of Java. Once Bali was captured, they could dominate the southern approaches to Java and cut it off from reinforcement. The landing force consisted of two transports escorted by four Asashio-class destroyers. This was a risky operation since the landing took place near one of the principal Allied naval bases on Java. But, as usual, when the landing occurred in the early morning hours of February 19, the Allies were caught by surprise and responded in a chaotic manner. The Allied response plan called for three different attack waves from three different bases. With a total of three cruisers and seven destroyers, the Japanese were dramatically outnumbered, but the Allied plan committed them to piecemeal attacks.

Dutch light cruisers *De Ruyter* and *Java* led the attack, followed by Dutch destroyer *Piet Hein*, and American destroyers *Pope* and *Ford*. When the Allied force arrived at the Japanese anchorage, only transport *Sasago Maru* was present with destroyers *Asashio* and *Oshio* as escort. The Allied ships caught the Japanese by surprise when they arrived in the anchorage before midnight. *Java* sighted *Asashio* first, but the Dutch were slow to open fire. At 2230hrs, *Asashio* spotted *Java* and attempted to illuminate the cruiser with a searchlight. The resulting engagement was short and indecisive. *Java* engaged the destroyer at 2,200 yards; a round hit and destroyed the searchlight killing four and wounding 11. Another round hit *Sasago Maru*. In return, *Java* took a 5in shell hit. With this, the Dutch cruisers broke contact.

This scene shows the next phase of the action when the Allied destroyers attacked. *Piet Hein* was some 5,000 yards ahead of the two American ships. *Oshio* was the first to gain contact, sighting the Dutch destroyer at 2235hrs some 6,000 yards away. After a series of unsuccessful torpedo and gun attacks on *Sasago Maru*, at 2240hrs, *Asashio* engaged *Piet Hein* at a range of only 1,600 yards and subsequently brought the American destroyers under fire. After the two American destroyers headed west, *Piet Hein* was left alone. After launching two torpedoes at *Asashio*, *Piet Hein* took a shell in the aft boiler room. Japanese 5in shells set the Dutch destroyer afire and brought it to a stop. Before power could be restored, the ship was hit at 2246hrs by a torpedo from *Asashio*. The Dutch ship quickly capsized and sank with the loss of 64 crewmen. The rest of the battle was equally frustrating for the Allies. *Asashio* and *Oshio* regained contact on the American destroyers and chased them to the southeast.

By the time the Allied second wave arrived, *Oshio* and *Asashio* had returned to the damaged *Sasago Maru* while destroyers *Arashio* and *Michishio* were coming south to join the fight. The four Japanese destroyers outfought the Dutch light cruiser *Tromp* and four more American destroyers. *Tromp* was heavily damaged by 11 5in shells and forced to retire. Destroyer *Stewart* was also damaged by shellfire and had to withdraw. Both *Tromp* and *Stewart* played no further role in the campaign. In return, *Oshio* took a 5.9in shell on the bridge and *Michishio* was crippled by gunfire and brought to a stop. The heavily damaged destroyer was towed away for repairs that took most of 1942.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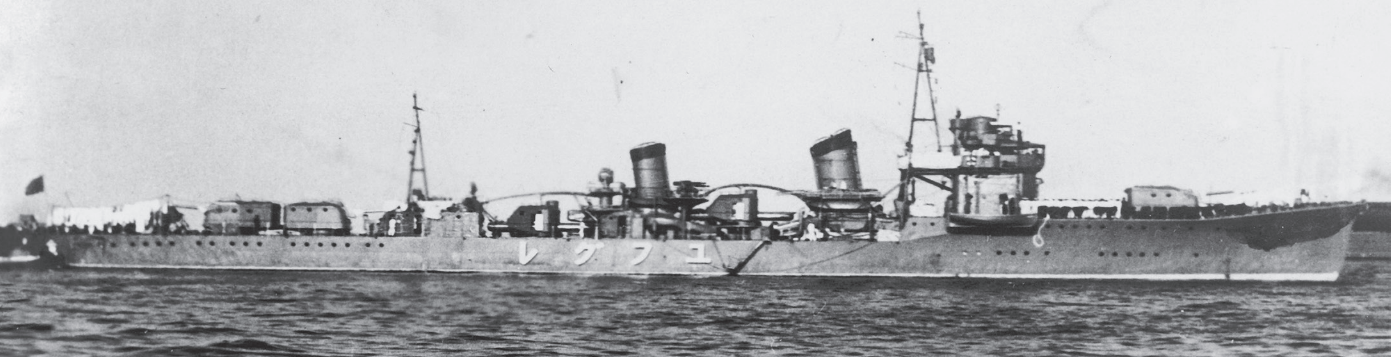
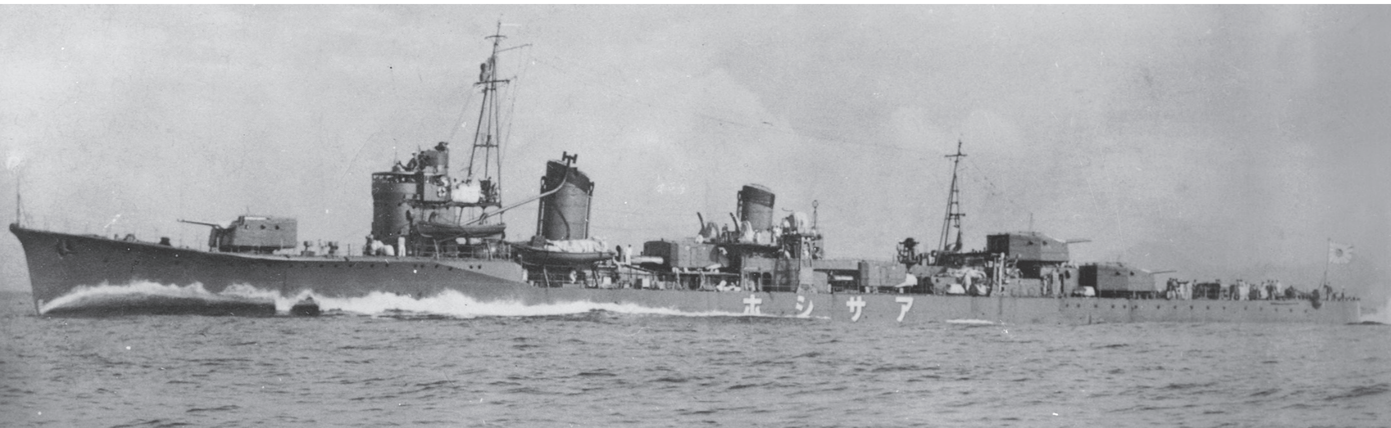


The Hatsuharu class was an unsuccessful attempt to mount the same armament of a Special Type destroyer on a smaller hull. The original design was a failure. After a major redesign, this was the result, as seen in this view of *Yugure* in 1935. Note the three 5in mounts with five 5in guns and two triple torpedo mounts. (Yamato Museum)

The next class of IJN destroyers broke the mold. They were so different from previous classes that they were known as Special Type destroyers, and when they entered service in 1928, they were the most powerful in the world. The capabilities of the class were driven by a desire to build formidable warships not restricted by the Washington Naval Treaty. As usual, the design emphasis was on a heavy torpedo battery. Fubuki-class ships fulfilled this imperative carrying nine torpedo tubes and nine reloads. The main gun battery was also increased to an impressive six 5in guns. Fitting all this firepower in a destroyer hull created stability problems, but these were corrected by the start of the war. A total of 24 Special Type destroyers were built by 1932 in two classes. One was sunk in a collision in 1933.

Because they were designed before 1930, the size of the Special Type destroyers was not restricted. When it came into effect, the London Naval Treaty of 1930 had a serious impact on IJN destroyer construction. Not only was total destroyer tonnage capped at 105,500 tons, but the largest destroyers were restricted to 1,850 tons, and only 16 percent of tonnage could be this large. All other destroyers could not exceed 1,500 tons. Thus, the next few classes of Japanese destroyers attempted to replicate the capabilities of the Special Type destroyers on a publicly stated smaller displacement. The first attempt was the six-ship Hatsuharu class. Designed with five 5in guns and nine torpedo tubes, they were seriously unstable and had to be rebuilt before the war. The Shiratsuyu class followed with the benefits of the modification made to the previous class. The redesigned class was successful but was over treaty limits. The Shiratsuyu class was the first to carry quadruple torpedo mounts.

By the time the next class was begun in 1935, the IJN had already decided to ignore the London Naval Treaty, which did not actually expire until the end of 1936. This allowed the Japanese to build new destroyers with the size and



The Asashio class represented a return to large destroyers with a heavy gun and torpedo battery. This is *Asashio* in July 1937 just before being commissioned. Note the three twin 5in twin mounts and two quadruple torpedo mounts. This successful design was the basis for the following Kagero and Yugumo classes. (Yamato Museum) capabilities of the Special Type units. The first ships so designed were the ten destroyers of the Asashio class. Increased tonnage translated into more room for a more powerful propulsion system and a return to a six-gun main battery. Building on the success of the Asashio class was the Kagero class. This class was virtually identical in appearance and possessed the same capabilities. The ultimate refinement of the Special Type destroyer was the Yugumo class. It was basically a repeat of the Kagero class. By the start of the war, only one ship had entered service; a total of 19 were eventually completed.

Submarines

Though it was largely ineffective during the first few months of the war, the IJN's submarine force was one of the largest in the world. As was the case with every other IJN platform, submarines were designed to maximize their offensive potential so had to carry large deck guns and the most torpedoes possible. Several types of submarine were developed within the framework of supporting the decisive battle concept. The first large fleet submarines (*kaidan*) were mostly a failure but set the trend for future large fleet submarines. The *junsen* type was designed for independent operations across the Pacific and Indian oceans. In order to meet specific requirements, three different types of boats were designed for specific roles: A Type boats were command submarines; B Type were long-range scouting boats equipped with floatplanes; C Type units were designed as attack submarines and carried additional torpedo tubes. A few RO-type boats were in service in 1941. These were smaller submarines designed for coastal operations.

PRINCIPAL IJN SUBMARINES, DECEMBER 1941–JUNE 1942

Type (number in service 12/41)	Displacement (surface, in tons)	Dimensions in feet (length/ beam/draft)	Maximum surface speed (knots)	Range	Weapons
KRS (4)	1,383	280/25/15	14.5	10,500nm at 8kts	4 tubes (12 torpedoes); 1 5.5in gun; up to 42 mines
J1 (4)	2,135	320/30/17	18	24,000nm at 10kts	6 tubes (20 torpedoes); 2 5.5in guns
J1M (1)	2,243	320/30/17	18	24,000nm at 10kts	6 tubes (20 torpedoes); 2 5.5in guns
J2 (1)	2,243	323/30/18	20	20,000nm at 10kts	6 tubes (17 torpedoes); 1 5.5in gun; 1 floatplane
J3 (2)	2,525	359/30/17	23	14,000nm at 16kts	6 tubes (20 torpedoes); 1 5.5in gun; 1 floatplane
KD3A/B (9)	1,800	330–331/26/16	20	10,000nm at 10kts	8 tubes (16 torpedoes); 1 4.7in gun
KD4 (3)	1,720	321/26/16	20	10,800nm at 10kts	6 tubes (14 torpedoes); 1 4.7in gun
KD5 (2)	1,705	321/27/16	20.5	10,000nm at 10kts	6 tubes (14 torpedoes); 1 3.9in gun
KD6A/B (8)	1,785	344/27/15	23	14,000nm at 10kts	6 tubes (14 torpedoes); 1 3.9in or 4.7in gun
KD7 (10)	1,833	346/28/15	23	8,000nm at 16kts	6 tubes (12 torpedoes); 1 4.7in gun
A1 (3)	2,919	373/31/18	23.5	16,000nm at 16kts	6 tubes (18 torpedoes); 1 5.5in gun; 1 floatplane
B1 (7)	2,584	357/31/17	23.5	14,000nm at 16kts	6 tubes (17 torpedoes); 1 5.5in gun; 1 floatplane
C1 (5)	2,554	359/30/18	23.5	14,000nm at 16kts	8 tubes (20 torpedoes); 1 5.5in gun
L4 (9)	996	250/25/12	16	5,500nm at 10kts	6 tubes (10 torpedoes); 1 3in gun
K5 (2)	700	240/22/11	19	8,000nm at 12kts	4 tubes (10 torpedoes); 1 3in gun

TECHNICAL FACTORS

While the IJN was able to develop modern weaponry and fire control equipment, it did not rely on technology as the primary means to defeat an enemy. The IJN placed great importance on intensive and realistic training for its crews. This was seen as a method to compensate for its numerical inferiority against the USN. Training was deliberately intended to be so intense that it could never be rivaled by the Americans and was so rigorous that it made wartime tasks second nature, even under the duress of combat and in the fog of war. In the 1920s, the then commander of the Combined Fleet ordered that night combat exercises be "more heroic than under battle conditions." Training was conducted in all weather and sea conditions. The pace was relentless. From May to October each year, the Combined Fleet conducted fleet-level exercises which included only two or three days of successive shore leave per month. Weekends did not exist in the Imperial Navy. The fact that these were realistic was attested in 1927 during night exercises off Honshu when two destroyers collided with light cruisers. One sank with 104 men lost, and the other was heavily damaged with another 29 casualties.

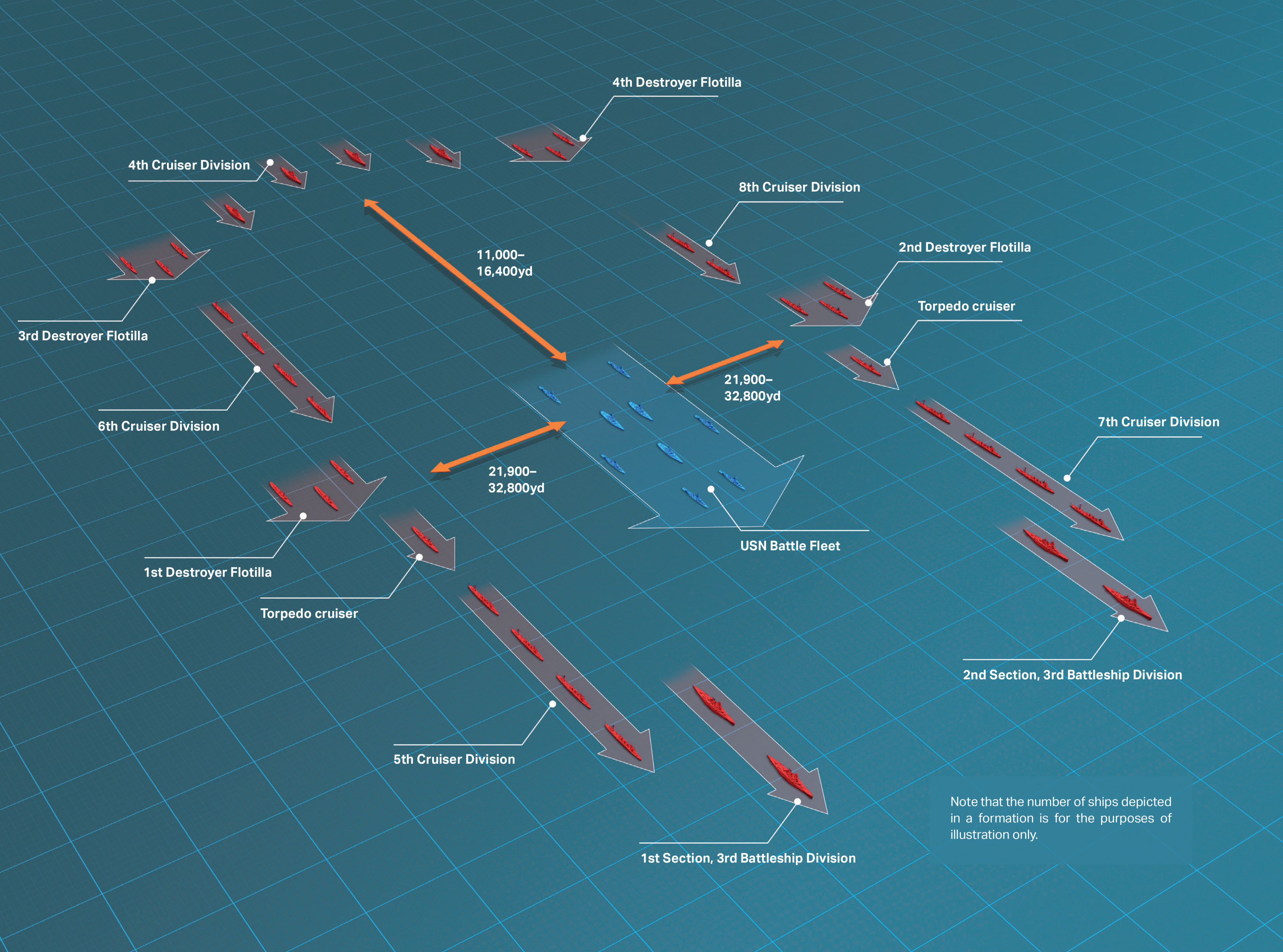
The result of this intense preparation was the creation of well-drilled crews led by aggressive and capable officers. At the start of the war, the IJN was at the peak of readiness and training. The strategy of developing high-quality crews paid off early in the war, but the extremely high standards of training could not be maintained under wartime conditions as losses mounted and crews faced the strain of constant operations.

Gunnery

The IJN developed and fielded a series of reliable naval guns between the wars. As a matter of course, they relied on high muzzle velocities for greater range. Each battleship had a main battery and a secondary battery. The secondary

JAPANESE TORPEDO TACTICS

Night fighting played a major role in the carefully crafted decisive battle doctrine to crush the USN's battle fleet. In the mid-1930s, the Japanese saw the night fight unfolding as depicted in this diagram. Once the American force had been spotted and tracked, the Night Battle Force would take up its positions. It was divided into four Night Combat Divisions, each with a squadron of heavy cruisers and a destroyer flotilla. The four Kongo-class battleships would provide support. The engagement would start with a concealed torpedo firing of some 130 Type 93 torpedoes by the cruiser divisions (except the Fourth trailing astern) and the two special torpedo cruisers. As these torpedoes hit their targets (at least 15 percent or more were expected to hit which would create immense chaos in the American formation), the order would be issued for all forces to attack. The heavy cruisers, supported by the fast battleships, would create holes in the enemy defenses to permit the destroyer flotillas to penetrate to the inner ring. If necessary, the cruisers and even the battleships would risk their own destruction to allow the destroyers access to the enemy's core. In the climactic phase of the battle, the destroyer flotillas would attack in coordination, closing to within close range (about 2,000 yards) of the enemy battle line to launch their weapons. After launching their first salvo, the destroyers would retreat to reload and fire another barrage. After some three hours, the engagement would be over.


4th Destroyer Flotilla
4th Cruiser Division
8th Cruiser Division
11,000–
16,400yd
2nd Destroyer Flotilla
3rd Destroyer Flotilla
Torpedo cruiser
21,900–
32,800yd
6th Cruiser Division
7th Cruiser Division
21,900–
32,800yd
USN Battle Fleet
1st Destroyer Flotilla
Torpedo cruiser
2nd Section, 3rd Battleship Division
5th Cruiser Division
1st Section, 3rd Battleship Division

Note that the number of ships depicted in a formation is for the purposes of illustration only.

battery did not consist of dual-purpose guns, so another battery of long-range antiaircraft guns had to be fitted. Heavy cruisers carried 8in guns with an excellent range but were handicapped by excessive salvo dispersion. They carried a secondary battery of dual-purpose guns for long-range antiaircraft protection and to engage surface targets. Destroyers were fitted with a reliable long-range 5in gun, but it was not dual purpose and suffered from a slow rate of fire.

IJN fire-control systems were comparable to those of other navies at the start of the war. In general, IJN fire directors were heavy and relied on manual inputs. On the other hand, Japanese fire-control optics were excellent. Like all navies of the period, the IJN struggled to hit targets at extended ranges. At medium and short ranges, Japanese crews enjoyed much better success. No Japanese ship carried radar at the start of the war.

Torpedoes

Japanese torpedoes were world-class. In particular, the Type 93 torpedo (later earning the name Long Lance from the Allies) become a proven ship-killer. After much work, the Japanese developed a long-range oxygen-propelled torpedo that entered service in 1936. The Type 93 was treated as a secret war-winning weapon because of its unrivaled capabilities. With its long range, the Type 93 had the potential to strike enemy formations at extended ranges before they even knew they were under attack. To increase their torpedo capabilities, IJN cruisers and destroyers carried reloads and high-speed reloading equipment. A well-drilled crew could reload their tubes in 15 minutes or less and return to the fight. The Type 93 was a centerpiece of IJN tactics.

Despite persistent myth, Japanese submarines did not carry the Type 93 Long Lance torpedo. They did, though, carry another oxygen-propelled torpedo with excellent capabilities – the Type 95. This weapon had been extensively tested after entering production in 1938 and was very reliable in service.

Another key weapon was the Type 91 air-launched torpedo. Most importantly, this was a reliable weapon capable of being dropped from altitudes up to 660ft and at speeds up to 120 knots. Its warhead was large enough to sink the most heavily protected warships.

Antiaircraft Weapons

During the first part of the war, Japanese ships were rarely subjected to concerted air attack. This was fortunate for the IJN since its antiaircraft capabilities were deficient. Japanese ships mounted inadequate numbers of antiaircraft weapons, and those that were fitted were poor. The weakness in antiaircraft protection meant that the best protection against air attacks was adept evasive maneuvering.

The IJN's standard long-range antiaircraft weapon was the Type 89 5in/50 high-angle dual-purpose gun. This was a twin mount and could only be fitted on larger ships because of its size and weight. Older ships retained the 4.7in/45 single gun mount. The Type 89 was a decent weapon except for its relatively short maximum

CARRIER-BASED AIRCRAFT ATTACK TACTICS

By the late 1930s, the IJN developed tactics to combine dive-bombing and torpedo attacks into a single coordinated attack. This promised to be much more effective since, if properly coordinated, it would overwhelm the target's defenses and provide protection to the much more vulnerable torpedo bombers. The IJN believed that torpedoes were the way to sink large warships. The relatively small bombs carried by dive-bombers lacked the power to sink large ships but were useful in suppressing the target's defenses. The IJN worked hard to increase the effectiveness of torpedo attacks. Introduction of the Type 91 aerial torpedo changed tactics dramatically. It was fast (42 knots), which the IJN preferred to ensure a greater hit probability. By the start of the Pacific War, the standard torpedo attack profile called for the aircraft to approach the target head-on from an altitude of 3,300–9,800ft. To increase speed, the vulnerable torpedo bombers went into a dive 12–14nm from the target. To increase the probability of a hit, the aircraft would divide into two groups to attack the target from both sides. This was known as a "hammer and anvil" attack because it would catch the target broadside no matter which way it turned. In the final phase, the torpedo bombers approached in a line abreast formation if antiaircraft fire was heavy at an altitude of 160–330ft. Speed was limited to 140–162 knots to ensure that the torpedo would enter the water successfully. The weapon was dropped about 2,600–4,000ft from the target. Dive-bombing was also perfected by Japanese aviators. This method of attack, using a steep vertical dive, offered the promise of much greater accuracy against moving targets at sea than horizontal bombing from altitude. The steep dive angle and speed gained by dive-bombers also made them harder to engage with antiaircraft guns. By 1941, the IJN had adopted a new set of dive-bombing tactics developed by Lt Sadamu Takahashi. His method called for the dive-bomber to approach the target head-on at about 10,000ft from 25–35nm away. The head-on approach was preferred, but in some situations a stern attack was better, depending on the position of the wind or sun. Attacking along the length of a target offered a larger target than attacking its beam. The dive-bombers approached the target in an echelon formation. Going to full power, the lead pilot began a ten-degree dive. When close enough to the target, he increased the dive to 65 degrees and aimed for the point where he thought the target would be given its course and speed. The bomb was released at 2,000ft, though many pilots pressed their dives and dropped at 1,500ft or less.

range. The Type 89 was handicapped by its fire-control directors, which were unable to handle high-speed targets. IJN doctrine was to use 5in guns as barrage weapons instead of using more effective aimed fire against specific targets.

The IJN's selection of a light antiaircraft weapon proved to be a huge problem. This was the Type 96 25mm gun, which came in twin and triple mounts. The Type 96 was flawed in several areas – it exhibited low training and elevating speeds, produced excessive muzzle blast, and had a low rate of fire since the crew had to keep reloading 15-round magazines. The weapon's fire control director was also weak. Those ships not fitted with the Type 96 by 1941 carried only 13mm machine guns which were too short ranged to be effective.

Aircraft

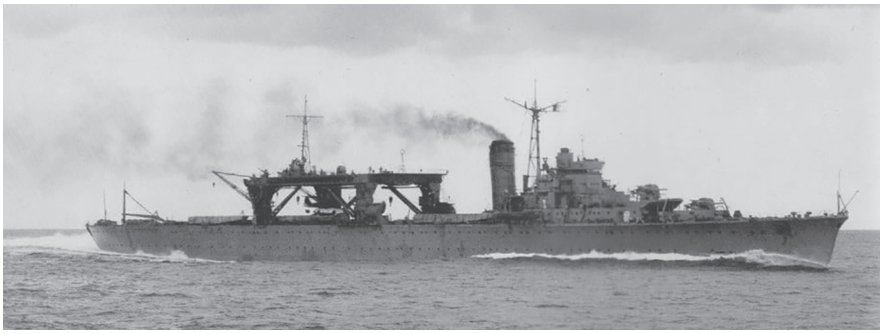
IJN air units were well equipped and trained to conduct attacks against enemy surface forces. This capability was the result of a combination of modern aircraft (both carrier and land based), excellent weapons and tactics, and well-trained aircrews. The IJN's ability to mass naval air power was unmatched by any other navy of the period and was the dominant factor in early Pacific War operations.

Every Japanese carrier had its own air group. These were designed primarily for offensive operations. Aircraft were designed to be long-ranged, at the expense of protection. With this edge in range, IJN air groups had the mission of destroying enemy carriers to gain air dominance. Each air group had a mix of aircraft, but the majority of aircraft were offensive. Even fighters were viewed as offensive weapons; air defense was a secondary mission.

Carrier air groups were equipped with two types of attack aircraft. The first was called carrier attack aircraft by the Japanese. These were capable of torpedo and level bombing missions. Fleet carriers carried a squadron of carrier attack aircraft. At the start of the war, the standard carrier attack aircraft was the Nakajima B5N2 Navy Type 97 Carrier Attack Bomber Model 12. With its fairly high speed and reliable torpedo, it was the most capable torpedo bomber of the period. It could also act capably as a level bomber. It was vulnerable to interception, with only a single rear-firing machine gun, and was susceptible to damage since it lacked protection for its fuel tank or crew.

The second type of strike aircraft were called carrier bombers by the Japanese. These were actually dive-bombers, and every fleet carrier embarked a squadron at the start of the war. Because of their attack profile, carrier bombers were seen as less vulnerable than carrier attack aircraft which had to approach their target at low altitude. The standard dive-bomber at the start of the war was the Aichi D3A1 Navy Type 99 Carrier Bomber Model 11. This was an outstanding and accurate dive-bomber and very maneuverable. However, it possessed mediocre performance with a slow maximum speed and an ability to carry only a small payload. As was the case for the carrier attack aircraft, the carrier bomber was unprotected and thus vulnerable to battle damage.

Since both Japanese carrier strike aircraft were vulnerable to interception by enemy fighters, it was crucial that they be escorted by fighters. The third aircraft in an IJN carrier air group was the Mitsubishi A6M2 Navy Type 0 Carrier Fighter Model 21. Each fleet carrier embarked a squadron of fighters. At the beginning of the war, half of these 18 aircraft were devoted to escort offensive missions, and half were devoted to defense of the carrier. The A6M2, better known as the “Zero,” was an outstanding offensive aircraft because of its long range, fairly high speed, and good firepower for the period. It was supremely



Chitose, pictured here in July 1938 on sea trials, was one of the IJN’s seaplane carriers that had no direct counterpart in the USN. Note the ship’s heavy armament and four catapults. These fast ships could carry up to 24 floatplanes. (Yamato Museum)

The IJN's premier land-based bomber at the start of the war was the G4M1, later given the Allied reporting name of "Betty." It fully delivered on its design emphasis of long range. However, it did have significant weaknesses which were not fully exposed during the early period of the war. (Naval History and Heritage Command)

maneuverable, and, in the hands of an experienced pilot, very difficult to defeat without the use of specific tactics. The Zero was also used by land-based units. The range of the Zero was unprecedented for a fighter, making it extremely important in the IJN's pre-war planning.

Reconnaissance was an important mission for Japanese carrier air groups. Because of their greater range, carrier attack aircraft were favored for reconnaissance missions. However, by doctrine, the Japanese did not favor the use of carrier attack aircraft for reconnaissance since this diminished the striking power of the air group. Therefore, the primary responsibility for reconnaissance fell on the floatplanes of the battleships and heavy cruisers of the task force. This reluctance to use strike aircraft for search missions caused problems in the early-war period.

The only navy to possess land-based long-range strike aircraft at this period of the war was the IJN. Long-range maritime strike was a requirement of the attritional strategy against the USN as it transited the Central Pacific en route to its destruction in the decisive battle. Work on the IJN's first long-range bomber was begun at the behest of Rear Admiral Yamamoto, then head of the IJN's Aeronautics Department. By the start of the war, this had developed into the Mitsubishi G3M2 Navy Type 96 Attack Bomber Model 22. This was a successful design, capable of conducting torpedo or bombing attacks. The design's weakness was lack of defensive armament and lack of protection. Though happy with the G3M, the IJN desired a bomber with even greater range. The Mitsubishi G4M1 Navy Type 1 Attack Bomber Model 11 entered service in 1941 and was in the process of replacing the G3M when the war began. In respect to its range, the G4M was a brilliant design. However, its immense range was gained at the expense of protection. The Model 11 had no armor or fuel tank protection. The IJN's capability to conduct long-range maritime attack, and in particular torpedo attacks, was a major shock to the Allies at the start of the war.

HOW THE FLEET OPERATED

ORGANIZATION

The IJN's operational chain of command nominally began with Imperial General Headquarters. Established in 1937, it was the coordinating authority for the different strategies of the Imperial Army and Navy. It was ineffective in this role. The Naval General Staff was responsible for overseeing naval operations. This included preparing war plans, intelligence collection and analysis, and an ill-defined authority to direct actual operations. This authority was blurred because the commander of the Combined Fleet saw himself as the driving force behind strategy and operations.

The Combined Fleet was in command of all IJN oceangoing components. This made the Combined Fleet almost synonymous with the IJN. The only combat forces of the IJN not controlled by the Combined Fleet were the China Area Fleet and the various naval and guard districts. The Combined Fleet was originally a temporary organization established for specific periods. In 1924, it became permanent, but did not have a permanent headquarters staff until 1933. It is important to note that the Combined Fleet was subordinate to the Naval General Staff. At the start of the Pacific War, this relationship was corrupt – the personality of Yamamoto made the Combined Fleet virtually immune to direct supervision from the Naval General Staff.

As with all navies, the Combined Fleet had a peacetime organization and a more flexible and task-organized wartime structure. The peacetime structure revolved around a number of fleets formed to meet geographic and functional requirements. From these standing fleets, the Combined Fleet formed fleets structured to conduct specific missions. The best early-war example of this was the Southern Expeditionary Fleet formed before the war to oversee the Southern Operation. As the complex operation preceded, the Southern Expeditionary Fleet was disestablished on January 3, 1942 and replaced with the First, Second, and Third Southern Expeditionary Fleets between January and March to conduct the invasion of Malaya and the NEI. Within each fleet, one or more task forces were created as dictated by the specific mission.

Command and Control

The commander of the Combined Fleet, and his principal subordinates, were able to exercise good command and control of fleet units all over the Pacific. In large part, this was because the IJN's communications system was modern, flexible, and efficient. Its equipment was dated compared to American systems but proved adequate to the task. Whenever feasible, the Japanese preferred to pass communication traffic by cable. At the start of the war, this was only possible between Tokyo and the naval districts or to a small number of fleet buoys in Japan. Otherwise, all traffic had to be passed by radio.

Maintaining communications was the responsibility of communications units. By mid-1944, there were 25 of these under the operational control of the Naval and Guard Districts. There were two types of communications units – Specially Established Units and Combined Communications Units. The latter could conduct radio intelligence duties in addition to regular communications duties. Each unit had as many as five detachments to cover all of Japan's island possessions.

Radio traffic was passed in three manners – via a continuous broadcast, ship-to-shore, and point-to-point. Central Broadcast No. 1 was the most important since it was guarded by all flagships of the Combined Fleet. In addition to the central broadcast out of Tokyo, there were also four broadcast zones – Sasebo, Ominato, Truk, and, from early February, Singapore. Each of these provided a local broadcast. Ships at sea would monitor the central broadcast and the local broadcast of the zone they were in. Smaller ships or small stations relied on the local broadcast or point-to-point communications. During the opening months of the war, the navy's communications system proved able to meet the needs of the principal commanders. Later in the war, as Japan's holdings grew, the communications system became strained, especially in the area of trained personnel to run it.

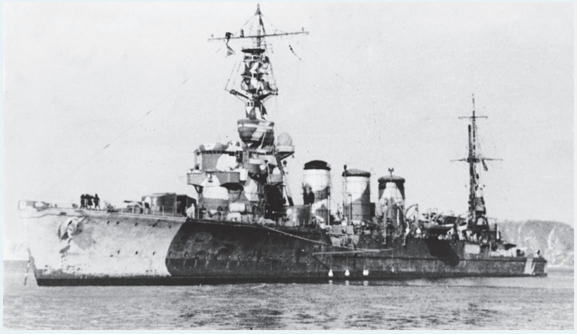
The commander of the Combined Fleet was a special case. He could exercise command from ashore or embark on one of the fleet's principal warships. There were advantages to staying ashore as opposed to being embarked. If ashore, the commander was at liberty to communicate freely with all of his component commanders. With a greater capacity to send and receive messages, the commander had better overall situational awareness. If embarked, the commander could be restricted in his ability to communicate. The primary issue was that a ship at sea could not transmit without the danger of being located. This was a serious limitation if the fleet was operating under conditions of radio silence in order to arrive at a particular position unlocated. Yamamoto, as was the tradition of all IJN commanders, preferred to operate from a flagship. As the war began, his flagship was the battleship *Nagato*, which was anchored in the Combined Fleet anchorage in the Inland Sea near Hiroshima. *Nagato* seldom left anchorage during the first months of the war, so being embarked

THE STANDING FLEETS

Principal ships were assigned to divisions (called *sentai* by the Japanese without any class description). Battleship divisions included three or four ships, usually broken down into two sections. Carriers were also assigned to divisions, with two ships making up a division. Heavy cruisers were assigned by class to a division while light cruisers were assigned as leaders to destroyer flotillas; the excess was formed into cruiser divisions. Destroyers were organized into flotillas (also called squadrons). A full-strength flotilla was assigned four divisions (each with three or four destroyers of the same class with a flagship light cruiser). Submarines were also organized into flotillas with a variable number of divisions. Every flotilla was assigned its own submarine tender, and each division had a variable number of submarines depending on the number of submarines built to the class that made up the division. The Japanese went to great effort to keep divisions homogeneous to the same class, from carriers down to submarines. This homogeneity was important since the ships would have the same characteristics in battle.

Base forces were composite units assigned with divisions of small combatants and land defense and guard units to protect shore facilities. Most also had a small air component for self-defense. Typically, the sea-going part of the force was composed of a mix of gunboats, minesweepers, and submarine chasers for local defense. Most of these were filled out with converted merchant ships. This demonstrated how important the mobilization of merchant units was to the IJN in order to conduct an array of escort and patrol duties.

Tama, one of the five Kuma-class light cruisers, was photographed in January 1942 with a camouflage suited for operations in northern waters. At the start of the war, *Tama* was flagship of the 21st Cruiser Division and the Fifth Fleet. (Yamato Museum)



All IJN battleships were administratively assigned to the **First Fleet**. The 1st Division included the two Nagato-class battleships and *Yamato*, commissioned right after the war began. The 2nd Division comprised the Fuso- and Ise-class units. The four Kongo-class units made up the 3rd Battleship Division. One section of two ships was assigned to the Pearl Harbor force and the second section to the Southern Expeditionary Fleet. The 6th Cruiser Division was composed of the Kako- and Furutaka-class heavy cruisers. The 9th Cruiser Division was unique in that it comprised the two torpedo cruisers. Two destroyer flotillas were assigned to the fleet; most of the 1st Flotilla was detached to operate with the Striking Force (the carrier force known as the *Kido Butai*) and the 3rd Flotilla, led by light cruiser *Sendai* with its four divisions of Special Type destroyers, was sent south. Two light carriers, *Hosho* and *Zuiho*, were also assigned and were primarily assigned to training duties in the Inland Sea during the first few months of the war. During the first months of the war, the First Fleet lost its luster since it saw little action. The battleships spent most of their time at anchor in the Inland Sea waiting for the decisive battle.

The **Second Fleet** was the IJN's traditional scouting fleet. By the 1930s it was the home unit for most Japanese heavy cruisers. At the start of the war, it became the bedrock for the Southern Expeditionary Fleet. One of its cruiser squadrons was detached for service with the Striking Force (the carrier force known as the *Kido Butai*). Two full destroyer flotillas were also attached, each with four divisions of the IJN's most modern destroyers. The Second Fleet was assigned to lead the critical southern offensive. Its core was four divisions of heavy cruisers. The 4th Cruiser Division included the four powerful Takao-class units; the 5th Division comprised three of the four Haguro-class ships, and the 7th Division was composed of the four Mogami-class ships. The 8th Cruiser Division was allocated the two Tone-class cruisers, and then detached to operate with the Striking Force. Two destroyer flotillas completed the Second Fleet. The 2nd was led by light cruiser *Jintsu* and comprised four divisions of Asashio- and Kagero-class units. *Naka* was the flagship for the 4th and it had four divisions of Shiratsuyu-, Asashio-, and Kagero-class ships.

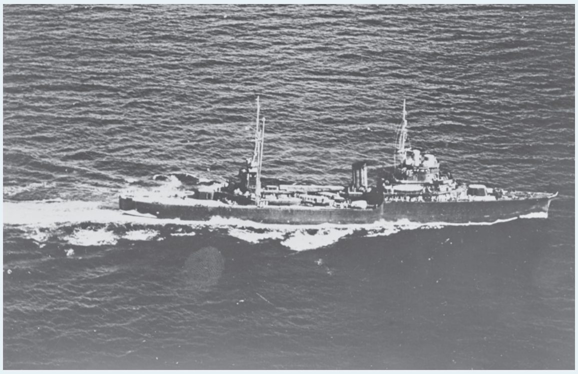
Tailored to support the invasion of the Philippines, the **Third Fleet** was mainly composed of transports and a collection of small combatants. The 16th Cruiser Division was assigned a single heavy cruiser, *Ashigara*, and two light cruisers. The only destroyers were from the 5th Destroyer Flotilla and these were older Mutsuki- and Kamikaze-class units. The 6th Submarine Flotilla also operated older boats.

The Third Fleet, also known as the Blockade and Transport Fleet, was not allocated many modern units since it expected solely to deal with units of the USN's Asiatic Fleet. The two base forces assigned to the fleet were assigned 46 transports and a collection of small combatants suited to escort and blockade duties.

The **Fourth Fleet**, or Mandate Fleet, was assigned four base forces to cover its huge area of responsibility that included the Mariana, Marshall, and Caroline islands, and consisted of older ships and a large number of small combatants – most converted from merchant ships. The only large combatants were the two light cruisers assigned to the 18th Cruiser Division and the old destroyers of the Kamikaze and Mutsuki classes allocated to the 6th Destroyer Flotilla. The flotilla only had two divisions and was led by the old cruiser *Yubari*. The most powerful component of the fleet was the two bomber groups assigned to the 24th Air Flotilla. The bulk of the fleet was composed of small combatants and auxiliaries assigned to its four base forces.

Defense of the northern approaches to Japan was the responsibility of the **Fifth Fleet**. At the start of the war, this was a backwater command and was allocated forces accordingly. To patrol northern waters, the fleet was assigned one division of light cruisers and another of armed merchant cruisers. At the start of the war, the defense of Japan was not a priority. Accordingly, the Fifth Fleet was assigned few ships, and those that it did receive were second line. The 21st Cruiser Division was assigned light cruisers *Tama* and *Kiso*. These were augmented by three armed merchant cruisers of Cruiser Division 22. A small base force covered the Bonin Islands.

Before the war, the IJN commissioned three cruiser-sized training ships. Because they had generous living quarters by IJN standards, they were suited to act as fleet flagships. This is *Katori* which assumed duties as Sixth Fleet flagship in May 1941. (Naval History and Heritage Command)

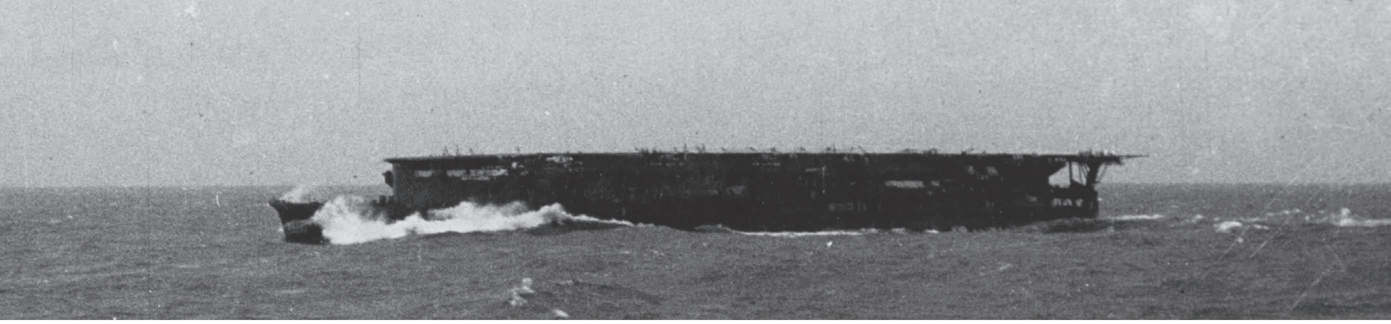


The IJN's most modern submarines were assigned to a single operational commander. This was the **Sixth Fleet**, the Combined Fleet's primary submarine command, forward deployed to Kwajalein for wartime operations. There were other submarine units not subordinate to the Sixth Fleet, but these were older boats. The 1st, 2nd, and 3rd Submarine Flotillas made up the fleet, each with a merchant ship converted into a submarine tender. Each flotilla had a variable number of subordinate submarine squadrons – four in the 1st; two in the 2nd; three in the 3rd. The larger command boats were directly attached to the 2nd and 3rd Submarine Flotillas. The commander was allocated light cruiser *Katori* as his flagship.

Two aviation fleets were also assigned to the Combined Fleet. The bulk of the Combined Fleet's land-based aircraft were subordinate to the **Eleventh Air Fleet**, formed in January 1941. Originally it consisted of three air flotillas with eight air groups, but by the start of the war had grown to four flotillas and ten air groups. Three of these, with a mix of fighters and long-range bombers, were assigned to support the southern offensive. Their effectiveness was crucial since only light carrier *Ryujo* was assigned to the Southern Expeditionary Fleet. The last of the four air flotillas was assigned to defend the Marshalls.

Carrier aviation gave the Combined Fleet its biggest edge over Allied naval forces. The **First Air Fleet**, formed in April 1941, was the administrative home to the IJN's carriers. Three carrier divisions, each with two fleet carriers, were assigned to the *Kido Butai* and supplemented with a mix of escorting battleships, heavy cruisers, and destroyers. With the *Kido Butai* allocated to the Pearl Harbor operation in its entirety, the role of the land-based Eleventh Fleet was elevated.

Also supporting the push into Southeast Asia was *Ryujo* from the 4th Carrier Division and the 11th Seaplane Tender Division with purpose-built seaplane carriers *Chitose* and *Mizuho*. The IJN was different from any other navy in its use of seaplane tenders. These ships were fast, thus able to operate with the main fleet, and had multiple catapults to launch their air group of approximately 24 floatplanes. The Combined Fleet operated five seaplane tenders converted from merchant ships. These floatplane carriers played an important, if overlooked, role in Japan's initial conquests.



Designed to circumvent treaty regulations, it took two major overhauls for light carrier *Ryujo* to be rendered fit for service. Designed to carry 48 aircraft, *Ryujo* carried approximately 33 in operational conditions. The small elevators and flight deck, combined with unfavorable elevator placement, reduced the carrier's effectiveness, but *Ryujo* still enjoyed success early in the war. (Naval History and Heritage Command)

offered no severe restrictions to Yamamoto's ability to coordinate fleet activities. When *Yamato* entered service, Yamamoto shifted his flag to her. At the battle of Midway, Yamamoto remained aboard *Yamato* and was unable to communicate freely as the fleet steamed toward Midway. Compare this approach to that of the commander of the USN's Pacific Fleet, Admiral Chester Nimitz, who exercised "grand tactical" control of the pivotal Midway battle from his headquarters at Pearl Harbor. Nimitz's approach was much more effective and reflected his more modern approach to war.

DOCTRINE

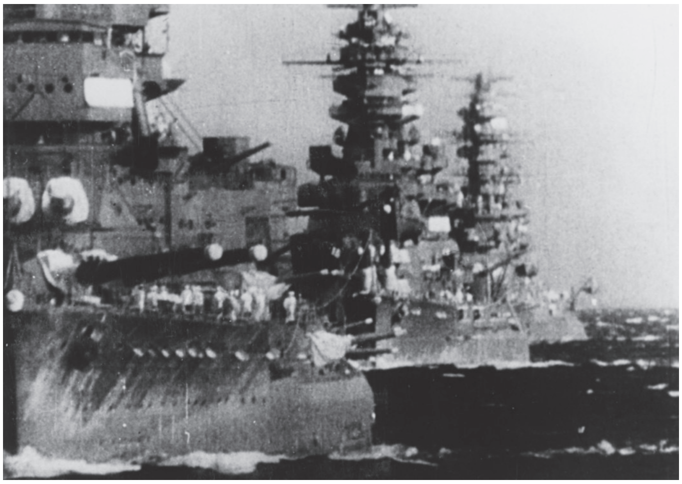
Each navy involved in the Pacific War entered the conflict with an established doctrine. The IJN relied on doctrine to provide a standardized framework for its training and operations. Doctrine, even for the IJN which was not known for its flexibility, was not a fixed set of procedures or rules. It changed over time, but the IJN relied heavily on its pre-war doctrine during the first few months of the conflict.

During the period between the wars, the IJN ascribed to the notion that the battleship was the decisive fleet component. No other part of the fleet could deliver such powerful blows and withstand those of the enemy. Because of their central role, IJN battleships were withheld from potential attrition until the decisive battle was fought. The exception was the Kongo class which was linked to the operations of the Night Battle Force. When the IJN's battle line (the Nagato-class ships of the 1st Battleship Division and the Fuso- and Ise-class battleships of the 2nd Battleship Division, joined by the Kongo class) approached the engagement, they would attempt to maneuver to cross the enemy's "T" to allow broadsides against an enemy only able to respond with its forward guns. A critical aspect to IJN doctrine was outranging the enemy. This applied to all fleet components. IJN battleships were designed with guns larger than a comparable enemy ship and thus with greater range. This allowed fire from ranges that the enemy could not effectively respond from. In the mid-1930s, the IJN calculated that Japanese battleships outranged their American counterparts by 4,324–5,468 yards. Naval Staff College studies indicated that Japanese battleships could track targets at 44,000 yards and open fire at 37,000 yards. This made the outranging doctrine possible. Furthermore, in 1939, the IJN believed that from 35,000 yards it would achieve a 12 percent accuracy rate with its main batteries with the aid of spotter aircraft. After shattering blows from the Combined Fleet's main battery guns and a series of torpedo attacks, the USN battle line would have suffered significant damage. At that point, the Japanese battle line would close to between 21,000–24,000 yards to deliver the final blows and secure a decisive victory.

Night fighting figured large for the IJN. Night-fighting tactics were rehearsed non-stop and refined. The last set of night-fighting instructions was issued in 1934. These revolved around the Night Battle Force with its long-range torpedoes attacking the USN's battle fleet to inflict heavy attrition in anticipation of the decisive duel between IJN and USN battleships. Heavy cruisers were to combine with the Kongo-class fast battleships to penetrate the USN's defensive ring. Once the way had been cleared, four night battle groups, each comprising a cruiser squadron and a destroyer squadron, would move through the gap to launch a mass torpedo attack. The tactics practiced as part of the IJN's night-fighting doctrine proved extremely useful during the war, even if the climactic clash of battle lines was never fought.

Over time, night fighting assumed its own mythology as a guaranteed method for the dashing units of the fleet to decimate the unskilled USN. Night-fighting tactics were built around the Type 93 torpedo. Following a "long-distance concealed firing" by heavy cruisers, a massed destroyer attack by the destroyers at close range would complete the destruction of the enemy. If necessary, the destroyers could reload and then conduct another mass torpedo barrage. The IJN was very proficient in the loading, aiming, firing, and reloading of the Type 93. After firing torpedoes, the destroyers would conduct a close-quarters gunfire attack, but gunfire was not the preferred method of attack for destroyers. Heavy cruisers were expected to use their main batteries to engage enemy targets at the longest range possible. In addition to special tactics, the IJN developed special equipment for night fighting, the most important being optics for low-light conditions. The IJN also developed star shells and flares, including a parachute-suspended flare in 1935. Japanese guns also used smokeless powder to avoid disclosing the firing ship's location.

Submarine operations were focused on direct support of the battle fleet at the expense of attacking enemy commerce. The Japanese did see the value in attacking American sea lines of communications, but this was a secondary mission compared to attacking the American battle fleet. Japanese submarine doctrine was greatly influenced by the decisive battle dogma. In order to contribute to the decisive battle, Japanese submarines had to be large to carry enough fuel for great endurance and enough torpedoes



Mutsu leads *Ise* and *Fuso* in a line-ahead formation before the Pacific War. The IJN believed in the central role of its battle line, as did all navies before the war. (Naval History and Heritage Command)

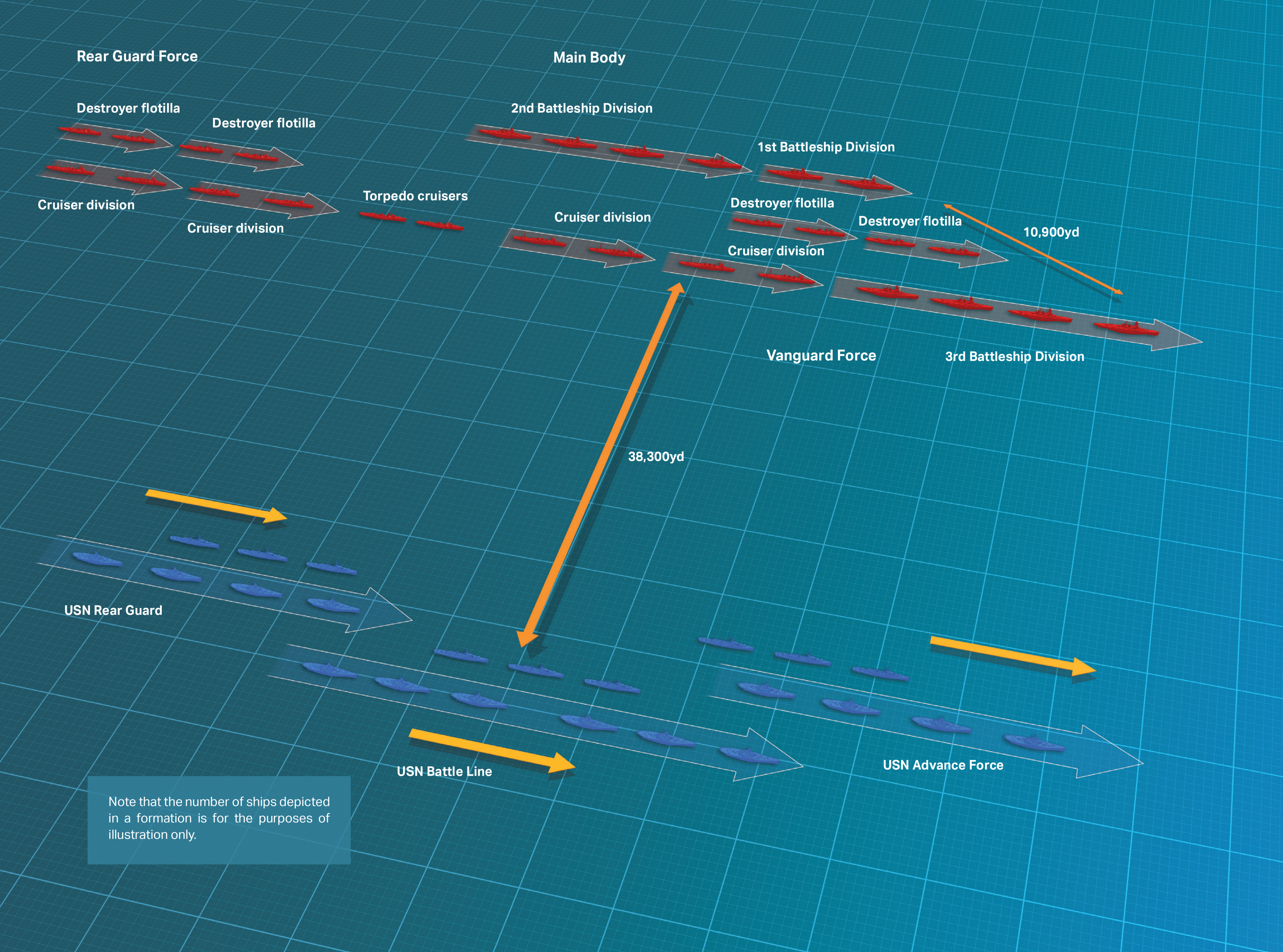
This is the 1st Destroyer Flotilla in the 1930s. The flagship is *Sendai* with nine Minekaze and Kamikaze destroyers anchored behind. The IJN placed an almost mythical attachment to massed torpedo attacks by destroyers. (Naval History and Heritage Command)

for multiple attacks. IJN submarines were expected to perform extended reconnaissance of the American battle fleet (including while it was in port), to shadow and pursue it, and to attack and exact attrition on it. The scouting aspect of the mission required that some submarines be equipped with floatplanes. To gain contact on the enemy, Japanese submarines were usually deployed in a picket line. If they gained contact, Japanese submarines were to use their high surface speed to race ahead and place themselves in the enemy's path to gain the best firing position. Early-war submarine operations were severely handicapped by an emphasis on concealment. This translated into extreme caution, which made the doctrine of racing ahead of an enemy to gain the best firing position clearly infeasible.

COMBINED FLEET DISPOSITIONS FOR THE DECISIVE GUN BATTLE

After the night battle, the gunnery phase of the decisive day battle would begin. All components of the Combined Fleet had a role to play in this engagement. The Combined Fleet would be broken down into three main groups – the Main Body with six battleships, the Vanguard Force with four battleships, two divisions of heavy cruisers, and two destroyer flotillas, and the Rearguard Force with the rest of the fleet's heavy cruisers and destroyers. Carriers would support the battle fleet by destroying American carriers and gaining air superiority.

The action would open with a concealed torpedo firing from the heavy cruisers and destroyers from 38,300 yards. Assumedly, this would not occur if the night battle had already expended the torpedoes aboard these ships. In the gunnery phase, as depicted here, the battle line with its six battleships would close to within 38,300 yards of the American battle line and open fire. This was calculated to be beyond the effective range of the American battleships. Once the combination of torpedoes and main battery gunfire had done its work, the battle line would close to between 20,800 and 24,000 yards to issue the final blows. Heavy cruisers would also fire from long range and open paths for the destroyers to conduct close-range (5,500 yards) attacks against any remaining American battleships. In the final phase, fleet submarines and midget subs carried by submarine tenders would join in the attack. Such an intricate script would call for a flawless coordination and a very cooperative enemy and was therefore unlikely to play out as desired had such a decisive clash ever occurred.

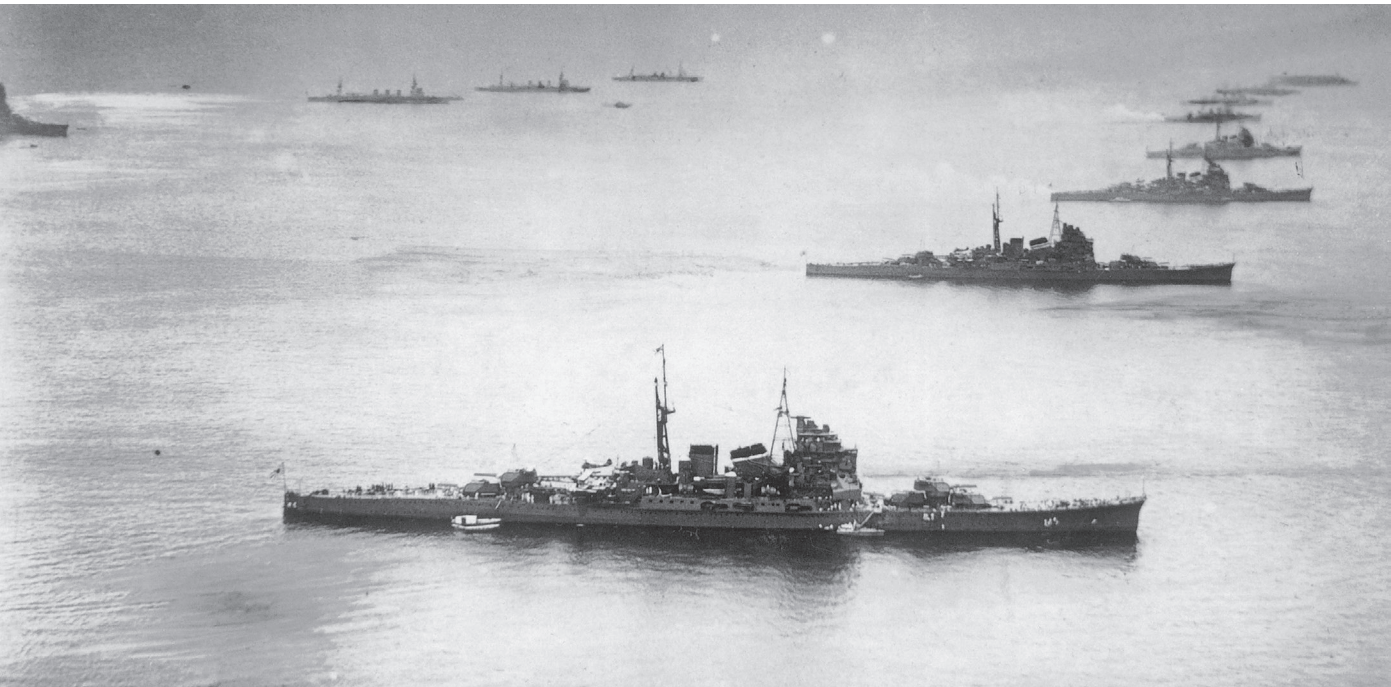

Rear Guard Force
Main Body
Destroyer flotilla
Destroyer flotilla
2nd Battleship Division
1st Battleship Division
Cruiser division
Cruiser division
Torpedo cruisers
Cruiser division
Destroyer flotilla
Destroyer flotilla
Cruiser division
10,900yd
Vanguard Force
3rd Battleship Division
38,300yd
USN Rear Guard
USN Battle Line
USN Advance Force

Note that the number of ships depicted in a formation is for the purposes of illustration only.

At the start of the Pacific War, the IJN had evolved a sophisticated doctrine for the employment of naval air power. When it came to handling aircraft from aircraft carriers, the IJN was the world leader. Japanese carrier doctrine was in flux at the start of the war. Exercises and the war in China demonstrated the power of massing carriers and aircraft, but the prevailing view before 1941 was that carriers should be dispersed since they were difficult to protect from enemy air attack. In 1941, the Japanese tested massing carriers in a single formation – the offensive and defensive advantages were immediately obvious. In April, a permanent carrier command was created. This development allowed for standardized training and the development of standardized tactics. It was the single most important development that made the Pearl Harbor attack possible.

The First Air Fleet, formed in April 1941, was initially composed of three carrier divisions, two seaplane carrier divisions, and ten destroyers. It should be noted that it was not capable of independent operations since it lacked the necessary escort and supply ships. Elements of the First Air Fleet were added to ships from other fleets to form the *Kido Butai*.

With the addition of the 5th Carrier Division in the late summer of 1941, the First Air Fleet boasted six fleet carriers in three divisions. Given the opportunity to work together, the Japanese mastered the techniques required to quickly launch mass strikes. Each carrier had a squadron of fighters, one of torpedo bombers, and another of dive-bombers. A large strike would typically include fighters pulled from each of the carriers present, and a mix of torpedo bombers and dive-bombers depending on the mission. Each carrier would launch one of its strike squadrons and leave the other as a reserve or contribute it to a second-wave attack. For example, at Pearl Harbor, the first attack wave was spotted on the flight decks of six carriers at 0530hrs on the morning of December 7, 1941 and the aircraft engines warmed up. At 0550hrs, the aircrews manned



The Takao class were the most powerful of the IJN's Treaty cruisers and were slated to play an important role in any major clash with the USN. This view from 1935 shows all four ships in the class with *Chokai* nearest to the camera. (Yamato Museum) their aircraft. Launch began at 0615hrs and was complete in just 15 minutes. A total of 183 aircraft headed south to their targets in a single loose formation. Among these were 43 fighters from six carriers, 89 carrier attack aircraft from four carriers, and 51 carrier bombers from two carriers. As soon as the first wave departed, preparation began for a second wave of 167 aircraft. No other navy in the world could come close to matching this performance.

The exception to the excellence of Japanese carrier doctrine was fleet air defense. This area was one of neglect that would exact a high penalty only a few months into the war. The primary reason for this deficiency was the IJN's overarching focus on offensive operations. There were also technical reasons, like the lack of radar and the unreliability of radio communication with fighters assigned to fleet air defense. For these reasons, the IJN assessed it would not be able to defend carriers against air attack. This only served to reinforce the need for preemptive strikes on enemy carriers.

INTELLIGENCE AND DECEPTION

IJN intelligence capabilities were stunted by organizational issues and a general disdain for intelligence and its role in the planning process. Within the Naval General Staff, the Third Division was responsible for intelligence and the Fourth Division for cryptanalysis and communications security. Both of these were tasked to send assessments on enemy forces to the Operation Division. Had this system worked well, the operations staff would have received finished intelligence early in the planning process that it could use to formulate enemy intentions and capabilities, which was key to planning. But this was not the reality. The intelligence division did a poor job assessing information it received; instead it simply passed unverified intelligence to the operations staff with no analysis. What success the IJN did have in producing usable operational intelligence was in the area of traffic analysis that did provide glimmers of insight into USN operations. Cryptanalysis was an area of failure for the IJN, primarily due to lack of resources. As a result, the Japanese failed to gain entry into any American naval codes during the war. Even more critical than a lack of technical expertise in the various types of intelligence and cryptanalysis in general was how the IJN valued intelligence. It is accurate to state that the Naval General Staff Operations Division, as well as the operations staff at the Combined Fleet level, often simply ignored intelligence. They certainly ignored intelligence that conflicted with their operational agendas.

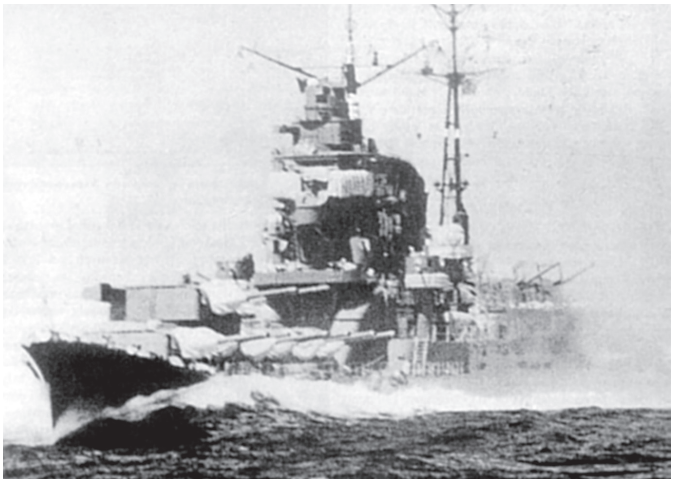
This disregard for intelligence made it a dead-end job to be avoided at all costs by aspiring Imperial Navy officers. As a result, there were inadequate numbers of intelligence officers and no process to grow their skills at what was a highly technical craft. For example, the Combined Fleet had a single dedicated intelligence officer. Each of the fleet staffs within the Combined Fleet also had a single intelligence officer. There was little, if any, exchange of information between Combined Fleet headquarters and the fleet staffs. Below the fleet level, there were no dedicated intelligence entities or intelligence officers. Thus, the fighting units of the Combined Fleet received inadequate intelligence support. The fact that the IJN did not value intelligence or intelligence officers should not be surprising. Other important staff functions, like logistics and trade protection, were also neglected. Any staff function not directly linked to the combat branches was staffed inadequately and by second-rate personnel.

In addition to being weak in intelligence, the IJN was catastrophically weak in the area of communications security. The principal Japanese naval code system – called "Ro" – handled all important radio traffic between the fleet's far-flung units. After failing to break the IJN's flag officer code system, the USN focused its efforts on the Ro system, which it called JN-25. In an astounding feat of cryptanalysis, USN codebreakers penetrated JN-25 early in the war to the degree that they could piece together the outline of major IJN operations. While the IJN's codebreakers and intelligence analysts produced virtually no insight into USN operations, USN commanders received timely and accurate operational intelligence that they boldly used to stop the IJN at Coral Sea and at Midway.

At almost every turn in the first few months of the war, the IJN's systemic weakness in developing and handling intelligence was a handicap, and at times proved disastrous. While the Japanese had the initiative and the benefit of a large numerical advantage, this problem was overshadowed by the weakness of its opponents. When this weakness was linked with the USN's excellence in determining IJN intentions, the result was defeat.

Japanese intelligence against the USN, and to a lesser extent Allied forces, at the operational level – the ability to predict and track operations – was a continuing weakness during the opening months of the war. Japanese intelligence was unable to track the movements of principal American fleet units. For example, on the eve of the Pearl Harbor attack, Vice-Admiral Nagumo Chūichi, commander of the *Kido Butai*, was led to believe that as many as six USN carriers could be present at Pearl Harbor. In fact, there were only two. *Saratoga* was in San Diego undergoing overhaul (a fact later transmitted to Nagumo), but the Japanese placed carriers *Hornet* and *Yorktown* in the Pacific when both in fact were still in the Atlantic. The Japanese did however have a source of exquisite intelligence supporting the Pearl Harbor operation. Spies operating out of the Japanese consulate in Honolulu kept them informed of American ship movements in and out of Pearl Harbor in the weeks preceding the attack. They also provided insight on the state of defenses in the harbor by confirming the lack of barrage balloons over the harbor and the absence of antitorpedo nets around the battleships. Once the war began this source immediately dried up. Ironically, these reports included the vital information that no USN carrier was present in Pearl Harbor on the morning of December 7. In spite of this accurate intelligence, the commanders on the scene failed to adjust their plans accordingly. This revealed another IJN weakness with regards to intelligence. The IJN never trusted its intelligence enough to alter the assumptions underpinning its operational planning.

Another IJN intelligence failure was evinced during the Indian Ocean raid in April 1942. The Japanese had no idea that the RN had assembled a large fleet with five battleships and three carriers to oppose the *Kido Butai*. They also had no idea where the British fleet was or that they were using a secret base at Addu Atoll 600nm southwest of Ceylon, in the southernmost part of the Maldives. This was not a developed base, but an anchorage and fueling base. Nevertheless, the RN used it during April 1942 when the IJN stormed into the Indian Ocean. The Japanese were unaware of the existence of this facility and remained so until after the war. Accordingly, the Japanese assumed they would hit the two naval bases on Ceylon and cripple the RN's Far Eastern Fleet. The *Kido Butai* did inflict heavy losses on the British during the operation, but not because it was acting on accurate intelligence.



Tone's entire main battery was fitted forward of the superstructure leaving the aft part of the ship for aviation facilities. Up to five floatplanes were carried on operations. This capability made *Tone* well-suited for operations with the *Kido Butai* since floatplanes were important for scouting missions. (Public Domain)

Throughout early 1942, the USN conducted a series of carrier raids against the periphery of the Japanese Empire, culminating in the famous Doolittle raid on Tokyo in April. At no time did IJN intelligence discern the next target of these raids and offer the Combined Fleet an opportunity to mount an ambush.

Not being able to track American carriers when they conducted pinpricks on Japanese-held islands in the Central Pacific was not a disaster, but this lack of insight did produce disaster in the two key battles in May and June 1942. At Coral Sea the Japanese had no firm indication whether American carriers were present in the area. This was only apparent after Japanese landing forces were struck by carrier aircraft at Tulagi Island in the southern Solomon Islands on May 4. In fact, two USN carriers had been dispatched to the South Pacific to stop further Japanese advances there, and two more were on the way and just missed taking part in the battle. Had they arrived in time, the USN would have gained a 2:1 advantage in fleet carriers. The two American carriers present were both struck by Japanese carrier air strikes on May 8, and both were claimed as sunk. However, one survived the battle and remained unlocated until it showed up at Midway. If Yamamoto had known that two American carriers were present in the South Pacific, and that another two were on the way, he may have called off the Port Moresby operation or sent more than just two fleet carriers of his own.

Midway is the ultimate example of the IJN bending intelligence to fit its planning assumptions. The IJN assumed that it would gain operational and tactical surprise at Midway though it had no insight into the location of the USN's carrier force or even the number of carriers that were operational. After gaining access into the IJN's primary operational code, the USN dispatched

THE PEARL HARBOR STRIKE FORCE

This diagram depicts the Kido Butai at the moment it was conducting launch operations on December 7, 1941. This was the only occasion in the war when all six carriers of the Kido Butai operated in a single group. This formation was favored by the Japanese as it was dispersed enough for the carriers to operate freely which enhanced ease of maneuver for flight operations and, if necessary, evasive maneuvers against attack. Operating the carriers in a single formation allowed the easy massing of air power for both offensive and defensive operations.

The carriers are arrayed in a large box with each 1.9nm from the other. Within the formation, the carriers are grouped by carrier division. After launching their aircraft, each carrier's strike would assemble into formation in an area adjacent to the carrier before all six air groups gathered into one formation to head to the target. Each carrier had a destroyer steaming behind it for plane guard duties. The destroyer was responsible for rescuing any aircrew from an aircraft that had a mishap during launch or recovery.

This loose formation was not maximized for antiaircraft protection of the carriers. Instead of forming a ring of escorts around the carriers as the USN would do to provide the highest level of fire support possible, the Japanese preferred to maintain a loose formation under air attack. The two battleships and two cruisers are deployed 4nm away from the carriers to provide early warning of air attack. This was necessary since none of the ships possessed radar, but it was not far enough away to provide adequate early warning and was too far away to allow the primary escorts to provide antiaircraft support to the carriers. In a situation where an air attack was likely, the destroyers would be deployed beyond the formation as depicted here to provide additional warning.

COMMAND STRUCTURE

First Carrier Division (*Akagi* and *Kaga*): Vice Admiral Nagumo Chuichi

Second Carrier Division (*Soryu* and *Hiryu*): Rear Admiral Yamaguchi Tamon

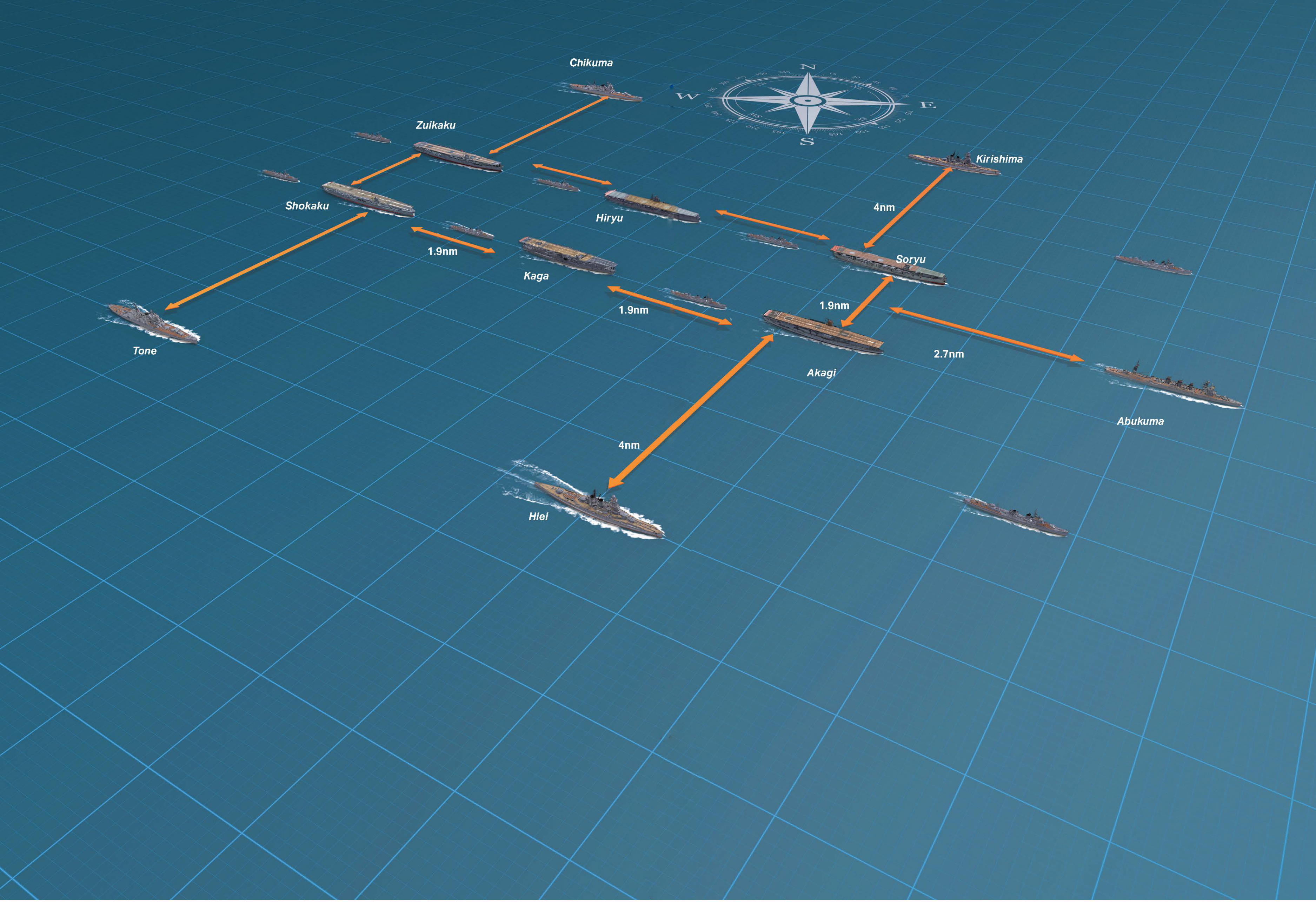
Fifth Carrier Division (*Shokaku* and *Zuikaku*): Rear Admiral Hara Chuichi

Support Force: Vice Admiral Mikawa Gunichi

Third Battleship Division (*Hiei* and *Kirishima*)
Eighth Cruiser Division (*Chikuma* and *Tone*)

First Destroyer Squadron: Rear Admiral Omori Sentaro

Flagship: light cruiser *Abukuma*
Destroyer *Akigumo*
Seventeenth Destroyer Division (destroyers *Hamakaze*, *Isokaze*, *Tanikaze*, *Urakaze*)
Eighteenth Destroyer Division (destroyers *Kagero*, *Shiranuhi*, *Kasumi* (assigned to First Supply Group), *Arare* (assigned to Second Supply Group))


Chikuma
N
W
E
S
Zuikaku
Kirishima
Shokaku
Hiryu
4nm
1.9nm
Kaga
Soryu
1.9nm
1.9nm
Tone
2.7nm
Akagi
Abukuma
4nm
Hiei

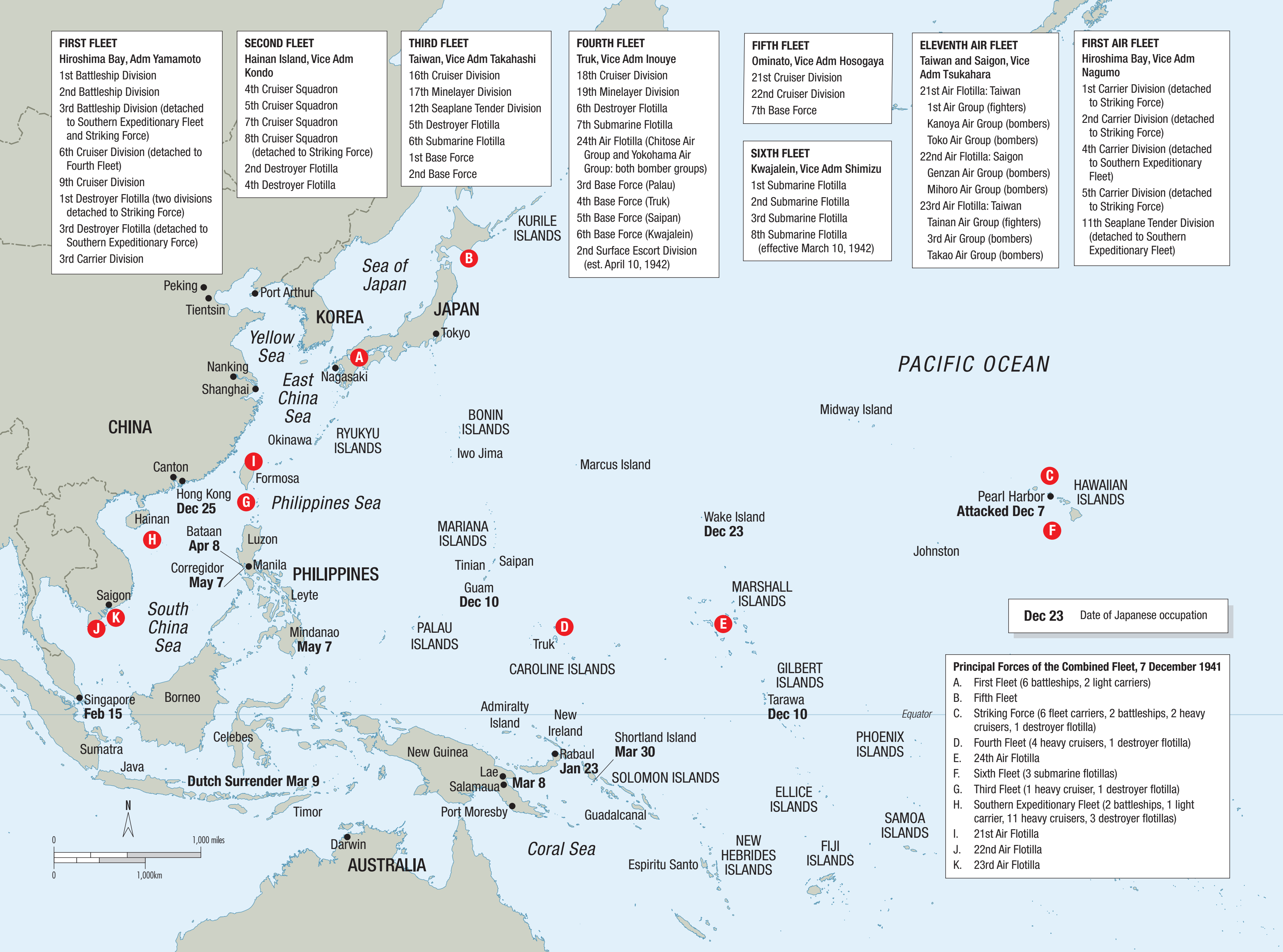
three carriers to lie in wait northeast of Midway to ambush the *Kido Butai*. Midway was the only carrier ambush of the war and was directly attributable to the failings of IJN operational intelligence and reconnaissance efforts.

Operational Deception

Deception was a key tenet of IJN planning. The Japanese believed that the tactic of having forces coming from unexpected directions at unexpected times was essential to victory. Deception was built into IJN operational planning usually through dispersal of forces. This prevented the enemy from properly assessing the size of the force it was facing and increased the prospects for surprise when the dispersed forces concentrated for the decisive phase of the battle. However, dispersion is also a potential weakness in that it leaves the various force elements open to defeat in detail. This could be mitigated if the dispersed forces operated closely enough together to support one another, but this was not always the case in Japanese planning. Against a weak opponent, the risks of dispersal were minimal. This was the case during the NEI campaign when the Japanese exercised excessive force dispersion to achieve their widespread geographic objectives. The Allies simply lacked the resources and decision-making quickness to attack isolated Japanese forces.

One occasion where the Combined Fleet's habitual dispersal of forces could have had its desired effect was at Coral Sea. A little-known aspect of the battle was the fact that the Japanese almost pulled off an ambush of the USN's carrier task force sent to the Coral Sea to stop the Japanese advance against Port Moresby. While the Japanese invasion force and several other supporting forces transited through the Solomon Sea to enter the Coral Sea from the north, the Combined Fleet's carrier covering force for the operation departed Truk and tracked north of the Solomon Islands to enter the Coral Sea from the east. USN intelligence failed to discover this aspect of the Japanese plan, and Allied reconnaissance did not spot the carriers, which entered the Coral Sea undetected. On May 6 and 7, IJN reconnaissance spotted the unsuspecting USN carrier force, but a combination of poor communications and simple bad luck prevented the Japanese carriers from landing an unseen blow.

The IJN took force dispersion to new heights during the Midway operation. In fact, dispersion was a major aspect of the plan. The operation was conducted to prompt a decisive battle to finish off the USN's Pacific Fleet. To make this happen, the Americans had to commit their forces to battle. In order to increase the likelihood that the Pacific Fleet would accept battle, the Japanese believed it necessary to hide the full extent of the forces involved in the operation. Once



FIRST FLEET
Hiroshima Bay, Adm Yamamoto
1st Battleship Division
2nd Battleship Division
3rd Battleship Division (detached to Southern Expeditionary Fleet and Striking Force)
6th Cruiser Division (detached to Fourth Fleet)
9th Cruiser Division
1st Destroyer Flotilla (two divisions detached to Striking Force)
3rd Destroyer Flotilla (detached to Southern Expeditionary Force)
3rd Carrier Division

SECOND FLEET
Hainan Island, Vice Adm Kondo
4th Cruiser Squadron
5th Cruiser Squadron
7th Cruiser Squadron
8th Cruiser Squadron (detached to Striking Force)
2nd Destroyer Flotilla
4th Destroyer Flotilla

THIRD FLEET
Taiwan, Vice Adm Takahashi
16th Cruiser Division
17th Minelayer Division
12th Seaplane Tender Division
5th Destroyer Flotilla
6th Submarine Flotilla
1st Base Force
2nd Base Force

FOURTH FLEET
Truk, Vice Adm Inouye
18th Cruiser Division
19th Minelayer Division
6th Destroyer Flotilla
7th Submarine Flotilla
24th Air Flotilla (Chitose Air Group and Yokohama Air Group: both bomber groups)
3rd Base Force (Palau)
4th Base Force (Truk)
5th Base Force (Saipan)
6th Base Force (Kwajalein)
2nd Surface Escort Division (est. April 10, 1942)

FIFTH FLEET
Ominato, Vice Adm Hosogaya
21st Cruiser Division
22nd Cruiser Division
7th Base Force

SIXTH FLEET
Kwajalein, Vice Adm Shimizu
1st Submarine Flotilla
2nd Submarine Flotilla
3rd Submarine Flotilla
8th Submarine Flotilla (effective March 10, 1942)

ELEVENTH AIR FLEET
Taiwan and Saigon, Vice Adm Tsukahara
21st Air Flotilla: Taiwan
  1st Air Group (fighters)
  Kanoya Air Group (bombers)
  Toko Air Group (bombers)
22nd Air Flotilla: Saigon
  Genzan Air Group (bombers)
  Mihoro Air Group (bombers)
23rd Air Flotilla: Taiwan
  Tainan Air Group (fighters)
  3rd Air Group (bombers)
  Takao Air Group (bombers)

FIRST AIR FLEET
Hiroshima Bay, Vice Adm Nagumo
1st Carrier Division (detached to Striking Force)
2nd Carrier Division (detached to Striking Force)
4th Carrier Division (detached to Southern Expeditionary Fleet)
5th Carrier Division (detached to Striking Force)
11th Seaplane Tender Division (detached to Southern Expeditionary Fleet)

Dec 23 Date of Japanese occupation

Principal Forces of the Combined Fleet, 7 December 1941
A. First Fleet (6 battleships, 2 light carriers)
B. Fifth Fleet
C. Striking Force (6 fleet carriers, 2 battleships, 2 heavy cruisers, 1 destroyer flotilla)
D. Fourth Fleet (4 heavy cruisers, 1 destroyer flotilla)
E. 24th Air Flotilla
F. Sixth Fleet (3 submarine flotillas)
G. Third Fleet (1 heavy cruiser, 1 destroyer flotilla)
H. Southern Expeditionary Fleet (2 battleships, 1 light carrier, 11 heavy cruisers, 3 destroyer flotillas)
I. 21st Air Flotilla
J. 22nd Air Flotilla
K. 23rd Air Flotilla

PACIFIC OCEAN
Sea of Japan
KURILE ISLANDS
B
JAPAN
Tokyo
KOREA
Peking
Tientsin
Port Arthur
Yellow Sea
A
Nagasaki
Nanking
Shanghai
East China Sea
CHINA
Okinawa
RYUKYU ISLANDS
BONIN ISLANDS
Iwo Jima
Marcus Island
Midway Island
I
Formosa
Canton
Hong Kong
Dec 25
G
Philippines Sea
Hainan
H
Bataan
Apr 8
Luzon
Corregidor
May 7
Manila
PHILIPPINES
Leyte
Mindanao
May 7
Saigon
K
J
South China Sea
MARIANA ISLANDS
Tinian
Saipan
Guam
Dec 10
PALAU ISLANDS
Truk
D
CAROLINE ISLANDS
Wake Island
Dec 23
MARSHALL ISLANDS
E
C
Pearl Harbor
Attacked Dec 7
HAWAIIAN ISLANDS
F
Johnston
GILBERT ISLANDS
Tarawa
Dec 10
Equator
PHOENIX ISLANDS
Singapore
Feb 15
Borneo
Sumatra
Java
Celebes
Dutch Surrender Mar 9
Timor
Admiralty Island
New Guinea
New Ireland
Rabaul
Jan 23
Shortland Island
Mar 30
SOLOMON ISLANDS
Lae
Salamaua
Mar 8
Port Moresby
Guadalcanal
ELLICE ISLANDS
SAMOA ISLANDS
Darwin
AUSTRALIA
Coral Sea
Espiritu Santo
NEW HEBRIDES ISLANDS
FIJI ISLANDS
N
0
1,000 miles
0
1,000km

the Pacific Fleet blindly sailed to Midway to accept battle, the dispersed Japanese forces would concentrate to annihilate the Americans. Totally unbeknownst to the Japanese, the Pacific Fleet was determined to fight for Midway but did not intend to follow Yamamoto's script for its destruction. After deciding to act on the intelligence he was presented with regarding the Combined Fleet's Midway operation, Nimitz had enough resources to make the Japanese pay for their excessive force dispersion and almost total disregard for American capabilities. The final result was that in the IJN's largest operation of the war, the First *Kido Butai*, containing the four fleet carriers committed to the operation, actually fought outnumbered with little idea of the enemy's strength and disposition.

LOGISTICS AND FACILITIES

Logistics is the lifeblood of a modern navy. This was especially true in the Pacific War, which was fought over immense distances. Logistics determined the course of operations and usually played a significant role in their success. In its formative years, the IJN had the luxury of fighting short wars against the Chinese and Russians in areas very close to its principal bases. This was not the case in a war against the United States. Early in the war when it was on the offensive, the IJN tended to frame its operations with scant regard for logistical issues. The IJN's propensity to underappreciate the crucial role of logistics was manifested by its understaffing of this critical function, and the continued willful ignorance of its impact in its operational planning.

IJN naval logistics was focused on four naval districts in the home islands – Yokosuka, Kure, Maizuru, and Sasebo. Each had a major shipyard capable of construction and repairs. A fifth yard at Ominato only handled major repair work. Each naval district possessed a collection of supply and fuel depots necessary to service the needs of the fleet, and light naval forces for local defense. In addition to the principal naval districts, there were seven naval guard districts built around minor bases. Two were in Japan, two in China, one in Korea, one in Taiwan, and one in the Pescadores Islands located in the Taiwan Strait. The one in the Pescadores and the Port Arthur Naval Guard District were deactivated in 1942. Eight commercial yards were also capable of construction, modernization, and repair of fleet units. Each of the civilian yards was allocated construction of certain types of naval ships to maintain and expand their capacity and expertise.

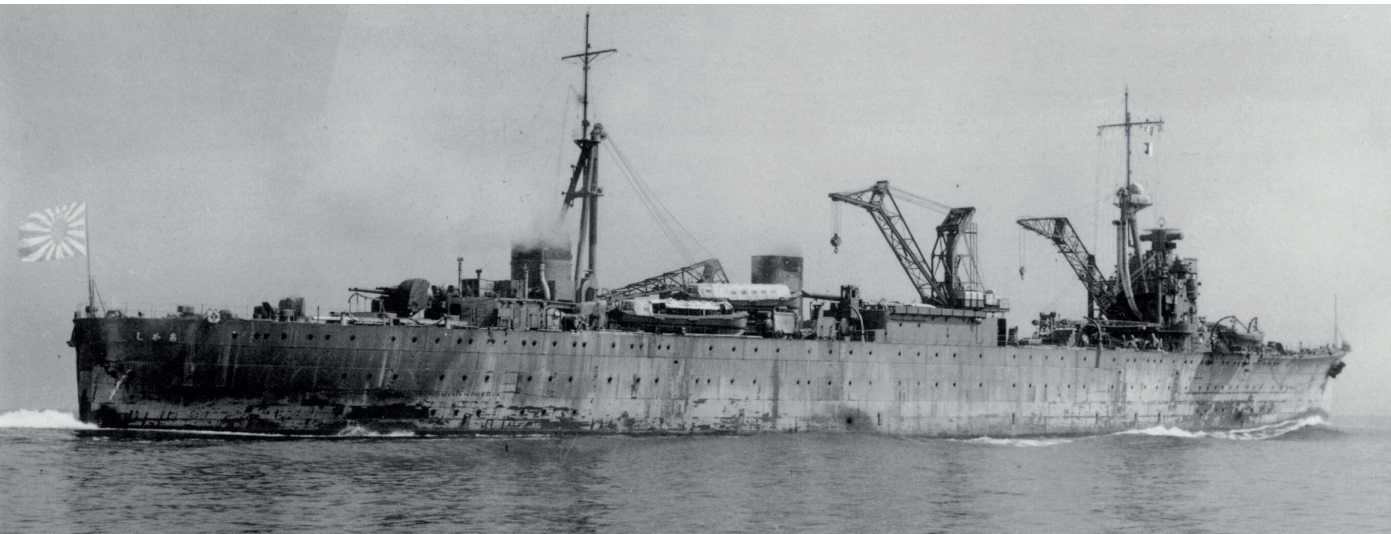
Outside of the naval districts, the IJN did not possess a single developed base. To launch its initial flurry of offensive operations, the navy relied on several anchorages. These were entirely undeveloped; any support provided to fleet units operating from them was provided from support ships. Most of these were not purpose-built ships but were instead merchant ships converted to special purposes.

The most famous and important anchorage used by the Combined Fleet was Truk Atoll, a cluster of 245 islands around a lagoon some 40nm in diameter. Located in the Caroline Islands, it was acquired by Japan in 1914. Its central location made it a perfect location as a fleet operating facility. From July 1942 until February 1944, the bulk of the Combined Fleet operated from Truk. Its large lagoon could easily hold the entire Combined Fleet, and the outlying islands sheltered the lagoon from direct attack from the sea. Under the terms of the League of Nations mandate, and per the Washington Naval Treaty of 1922, fortifying any of Japan's islands (which included building a naval base) was prohibited. With limited funds available, the navy decided to invest in offensive capabilities instead of facilities. Therefore, instead of a proper base with drydocks and repair facilities, facilities at Truk were extremely limited at the start of the war. There were no piers to accommodate large ships nor cranes to handle stores and supplies. Anything brought to Truk had to be unloaded in barges and shuttled ashore for unloading. Beginning in December 1940, the Japanese made efforts to improve facilities at the atoll. This included bringing in a 2,500-ton floating drydock and building fuel storage tanks on Dublon Island. Repair capabilities were enhanced by moving in repair ships and tenders. At the start of the war, total repair capacity was two destroyer-sized and five subchaser-sized ships. The paucity of forward repair facilities required most damaged ships to return to Japan for permanent repair. This kept them out of action for weeks or months.

Not until November 1940 was Truk Atoll defended at all. At that time, a base defense unit of 850 men was deployed to the atoll with a handful of 5in and 6in coastal guns. Even by the end of 1942, the base defense force was limited to 1,460 men with six patrol craft, and a few mine warfare ships. The only aircraft facility in the atoll before the war was a seaplane base on Dublon Island. In December 1942, the first of three airfields were completed.

The same situation existed at Palau, in the Marianas, and in the Marshalls. None had onshore repair or fuel storage facilities to support naval operations. When the Combined Fleet conducted operations against Allied forces in Southeast Asia, its Southern Expeditionary Force operated primarily out of anchorages at Cam Ranh Bay in French Indochina and from Hainan Island off southern China.

The situation regarding airfields was better. In the Marshalls, no attempt was made to build bases or airfields until 1939. The advent of the Type 96 long-



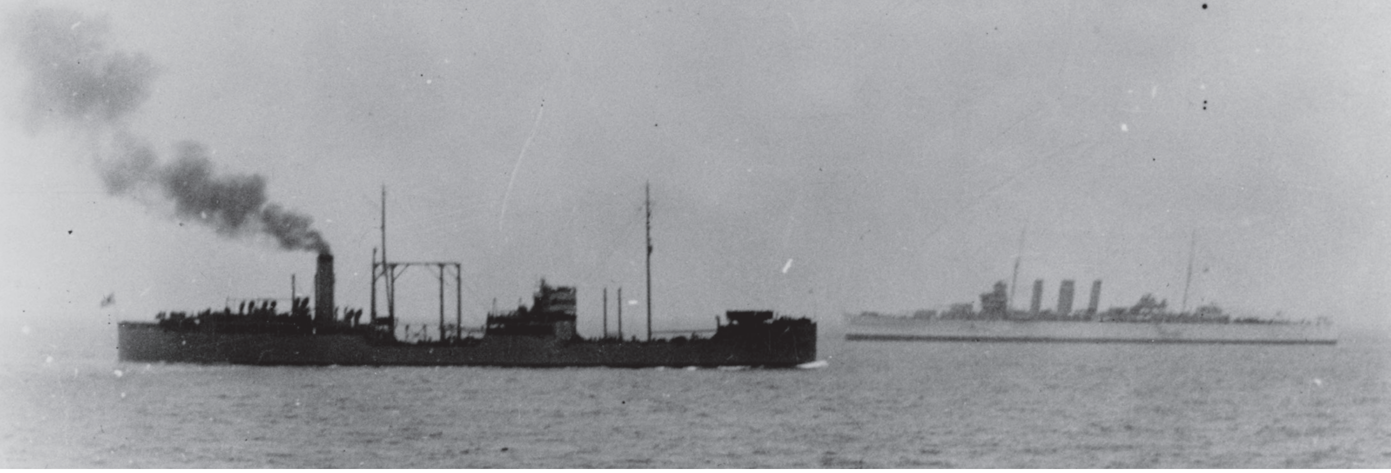
The IJN's only repair ship designed as such from the keel up was *Akashi*, shown here in July 1939 on sea trials. Deployed to support the fleet from anchorages, *Akashi* had the capability to perform basic repairs but major work required a trip to Japan. (Yamato Museum) range land-based bomber made these islands an attractive place for airfields. Accordingly, a crash construction program was begun in 1939 on three different atolls. The formation of the Fourth Fleet in 1939 (the so-called Mandates Fleet) was significant as it fostered a spate of military construction in the Caroline, Marshall, and Mariana islands. But until late 1940, there were no permanent shore garrisons or aircraft in the islands. Even though the Japanese got a late start on improving their military positions on the Mandates, they were invaluable locations from which to mount offensive operations at the start of the war.

As the Japanese conquered more territory, additional forward bases and airfields were required. This proved to be a major problem since the IJN had not anticipated the need to rapidly construct bases in remote areas with specialized units using modern machinery. Some construction units were formed right before the war in November 1941, but these were poorly equipped and depended on manual labor, not heavy machinery, to build facilities. This was not revealed as a key weakness early in the war, but as the Americans advanced against Japanese-held islands, the inability to quickly build airfields was a crippling problem.

The Fleet Train

Building specialized ships to handle the fleet's needs away from its main bases was not a high priority for the IJN. There were reasons for this, the foremost being that the navy expected to fight close to Japan and secondly because it focused on offensive capabilities over auxiliaries. In a war against the United States, this neglect of the fleet support train could not continue. The IJN met its needs with a combination of a small number of purpose-built auxiliaries supported by a large number of conversions from merchant ships. By the start of the war, the navy had requisitioned 482 merchant ships, which was 30 percent of Japan's merchant fleet. These carried out a multitude of tasks from performing as oilers and tenders, general transport duties, minelaying and minesweeping, and auxiliary submarine hunters. Eighty-five merchant ships were converted into gunboats and tasked to perform general patrol, antisubmarine, and local security duties. Their efforts are forgotten but were crucial to Japan's efforts to expand its empire and then defend it.

Any navy needs a constant supply of fuel oil to operate. This need consists of two parts – the availability of the fuel oil itself, and the ability to deliver it to fleet units. Given Japan's dependency on foreign sources for oil, the IJN made it a priority to create a large reserve stock by the start of the war. Though wartime operations burned through this reserve stock at a higher rate than expected, the availability of fuel oil was not a problem in the first few months of the war. The small number of oilers (capable of underway replenishment) and tankers (capable of carrying fuel, but not usually capable of conducting underway replenishment) meant that getting fuel to the far-flung Combined Fleet was an issue. From 1920 to 1923, the IJN commissioned a fleet of ten high-speed oilers. No others followed before the war because the navy adopted



Among the IJN's pre-war oilers was *Kamoi*, shown here in this pre-war view off the Chinese coast with RN heavy cruiser *Kent* in the background. *Kamoi* was converted to a seaplane tender in 1932–33 but resumed tanker duties in 1943. (Naval History and Heritage Command)

the strategy of subsidizing the construction of new civilian tankers that could be commandeered when war came. To make up for this small pool of oilers, the IJN requisitioned another 77 merchant tankers for conversion into auxiliary oilers. Most of these were acquired in 1941–42. By late 1942, the shortage of tankers was so acute that cargo ships were converted into temporary tankers.

Underway replenishment was still fairly new to the IJN at the start of the war. To make the Pearl Harbor raid operationally feasible, the navy had to develop and refine its techniques for underway replenishment in the months before the attack. The IJN used both the more efficient alongside technique and the slower astern method for which tankers required no specialized equipment. IJN ships usually had an inferior steaming radius because this was a design requirement secondary to strong offensive capabilities. Thus, IJN ships needed to refuel often when conducting certain operations. Nevertheless, by using oilers mostly converted from civilian tankers operating from anchorages instead of bases, the navy was able to successfully conduct a series of operations in the war's first months. This strategic mobility did not last long when both the availability of fuel and oilers became major problems.

Other important support ships were tenders for destroyers and submarines. These small and short-ranged units lacked the ability to maintain themselves and required support from larger ships. The IJN had two purpose-built submarine tenders, which were commissioned in 1923–24. Before the war, eight merchant ships were requisitioned and converted into submarine tenders. The navy's principal submarine command, the Sixth Fleet, relied on tender support when it moved to Kwajalein Atoll in the Marshalls at the start of the war. Four merchant ships were converted into destroyer tenders.

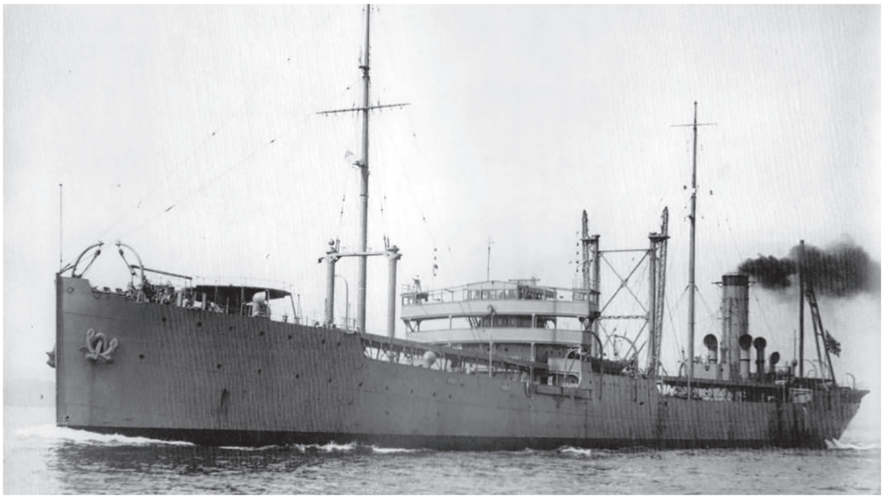
Repair ships were also vital to keeping the Combined Fleet in fighting shape. Instead of forcing a ship to return to Japan due to any operational issue or battle damage, repair ships could address minor issues in the forward areas. To do this, the navy commissioned the 10,000-ton repair ship *Akashi* in 1939. Five more repair ships were converted from merchants and deployed to various bases. There was also a need for ships to conduct general transport duties. To fulfill this need, 142 ships were converted from merchants and commissioned as transports between 1941 and 1945.

Though the IJN badly underestimated its munitions needs in wartime, it experienced few munition shortages for the first few months of the war. The exceptions were with the availability of Type 91 torpedoes and 25mm antiaircraft gun ammunition. The torpedo shortage meant that land-based bombers were forced to fly with bombs instead of torpedoes to attack naval targets. The shortage of 25mm ammunition was a continuing issue throughout the war.

Japan's Shipbuilding Capability

The IJN was at a severe disadvantage in a long war against the USN because of the disproportionate capabilities of the Japanese and American maritime industries. From 1922 to 1932, the IJN built more than twice the tonnage of the USN. This situation began to change when the USN received authorization in 1934 to build up to its treaty limits. This was followed in 1938 with additional authorizations to increase the size of the fleet by another 20 percent. The Two-Ocean Navy Act passed in 1940 represented the USN's intention to become the dominant navy in the world. The Japanese, unable to compete in the era of naval construction unfettered by naval treaties, responded from 1937 to 1941 with a series of programs. These focused on the modernization of existing units, the conversion of merchant ships for naval service, and a doubling of the naval air force. An expansion of the fleet through new construction was also requested, and this ambitious program included superbattleships, carriers, cruisers, and a large number of destroyers and submarines. Those ships approved in the naval program of September 1939 were finished during the war; almost all the others were fantasy since Japanese shipyards were already under severe strain from existing work, and the resources simply did not exist for additional construction. As the war developed, the IJN's expansion program was further refined after the battle of Midway. The latest naval program was canceled and replaced by a modified version that placed higher priority on the construction of carriers and submarines. A series of special plans were also instituted in 1941 for the construction of two carriers, 26 destroyers, 33 submarines, and a series of auxiliaries to perform supply, minesweeping, and minelaying duties. All these plans proved inadequate to meet the needs of the IJN after the war began. During the war, American shipyards produced 725 major combatants; in comparison, Japanese shipyards only managed 198. In the key category of carriers, the USN received 30 new units during the war, and the IJN only seven.

Though Japan began the war with a large, modern navy, it was quickly shown to be inadequate against the United States. The same was true of Japan's merchant fleet, which was the third largest in the world as war began. Fortunately for the Japanese, their pre-war estimate that wartime losses of merchant ships would be light in the first year of the war proved remarkedly accurate. However, there were never enough merchant ships to satisfy Japanese domestic needs and the needs of the military. Both the Imperial Army and Navy expropriated merchant shipping at the start of the war to meet their needs. As the empire expanded,



The mainstay class of Japanese fleet oilers were the ten ships of the Shiretoko class commissioned in the 1920s. By the start of the war these were outdated with a fuel capacity of only 8,000 tons and a 14-knot top speed. Note the gear on *Shiriya*, photographed in 1938, allowing the conduct of alongside replenishment. (Yamato Museum)

even more shipping was needed to move garrisons to far-flung islands and then support them on a continuing basis.

Japan's inability to build more shipping was due to limited steel stocks and limited shipbuilding facilities. The navy relied on eight major commercial yards for the majority (59 percent from 1926 until 1945) of its ships. These yards were also the primary source of merchant ships. Manpower in the shipyards was problematic after highly skilled workers were drafted into military service, and resources (particularly steel) were in short supply after the war began. Japanese shipyards did not have the capacity to build new ships for the navy concurrently with new merchant tonnage. The result was an inability to produce new units or repair those damaged in combat.

Repairs to naval units and merchant ships was a growing issue as the war progressed. Most repair and overhaul work on navy ships was done in the four main navy yards. The constant need to repair battle damage and conduct regular overhauls meant that new construction at the navy yards suffered once the war began. By 1941, only 20 percent of the navy's new construction was done in navy yards. The capabilities of the navy yards to meet the immediate needs of the fleet were demonstrated during the run-up to war in 1940–41. Before the war, many of the fleet's ships were not maintained in a combat-ready status. Ships and crews had to be reactivated for active service and merchant ships converted to naval use. The success of this program, carried out in secrecy, was astounding. At the start of the war, the IJN had reached its highest state of readiness. Only a single destroyer had not received its required overhaul before the IJN went to war.

During the war, repairs to warships received top priority. Since losses were light during the first months of the war, Japanese yards were able to address this need satisfactorily. The problem was that units damaged in action had no other option but to return to Japan for repairs. Repair ships deployed to distant bases could make temporary repairs, or correct minor damage, but permanent repairs had to be made in Japan.

COMBAT AND ANALYSIS

THE FLEET IN COMBAT

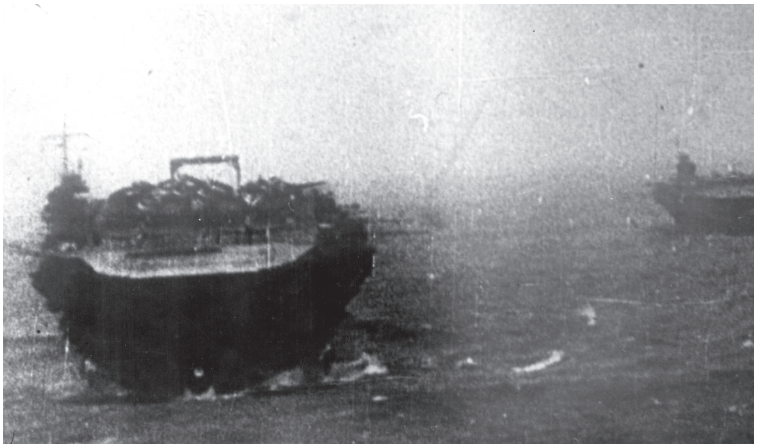
At the onset of war, the IJN possessed a slight numerical edge against the Allies in the Pacific. However, in the most important category of aircraft carriers, the Japanese had a significant advantage. In addition, the IJN could deploy a large land-based air force with ship-killing capabilities that had no counterpart in the Allied navies. Aside from their numerical edge, the IJN also possessed a qualitative edge. On an individual unit basis, IJN ships and aircraft squadrons were the best in the world. These advantages, combined with the difficulties the Allies had in coordinating their operations, afforded the Japanese the opportunity to score a string of victories during the first few months of the war and seize virtually all the key points they needed to supply their war economy and defend them from Allied counterattack. In spite of these immense advantages, within six months of opening the war, the IJN was defeated and forced to go over to the defensive.

PACIFIC NAVAL BALANCE, DECEMBER 7, 1941

	Battleships/ battlecruisers	Aircraft carriers	Heavy cruisers	Light cruisers	Destroyers	Submarines
Royal Navy and Dominions	2	0	1	8	12	1
Royal Netherlands Navy	0	0	0	3	7	15
USN Asiatic Fleet	0	0	1	2	13	29
USN Pacific Fleet	8	3	12	9	67	27
Allied Totals	10	3	14	22	99	72
IJN	10	10	18	20	112	65

The Pearl Harbor Operation

None of the IJN's operations at the start of the war was more audacious than the attack on Pearl Harbor. In accordance with Yamamoto's wishes, this attack included all six of the IJN's fleet carriers. Escorting the carriers were battleships



Only the IJN had mastered the use of massed carrier air power by December 1941, as was so amply demonstrated at Pearl Harbor. This is a view of the *Kido Butai* en route to deliver the opening blow of the war. Taken from *Akagi*, *Kaga* is shown steaming in rough seas with a Shokaku-class carrier behind. (Naval History and Heritage Command)

Hiei and *Kirishima*, heavy cruisers *Chikuma* and *Tone*, light cruiser *Abukuma*, and nine destroyers. To refuel the fleet on its long transit, seven tankers were attached to the Pearl Harbor force. Three submarines provided direct support to Nagumo's force during its transit.

Japanese operational security surrounding the raid was excellent. Radio traffic simulated that the ships of the Striking Force were still in the Inland Sea following their departure from the Kurile Islands on the morning of November 26. The force transited through difficult weather that lessened the prospects that it would be detected. The Japanese recognized that surprise was a pre-requisite for the operation's success. Using the northern route, they hoped to evade American aerial surveillance around Oahu – the Japanese correctly assumed that air surveillance to the north of Pearl Harbor was limited. In fact, on the morning of the attack, not a single USN long-range search aircraft was airborne to conduct a scouting mission. This highlighted the fact that the USN was not battle ready.

The attack on December 7, 1941 caught 87 ships of the Pacific Fleet in harbor. Among these were eight battleships but no carriers. The first wave of attackers, totaling 183 aircraft, were undisturbed by defending fighters or concentrated antiaircraft fire. The heart of the operation was the attack by 40 B5N2 carrier attack aircraft armed with torpedoes and another 49 carrying 1,780lb bombs specially designed to penetrate battleship armor. Attacking first, the torpedo bombers scored multiple hits on battleships *West Virginia* and *Oklahoma*, both of which quickly sank. Two torpedoes found battleship *California*, which later also sank. *Nevada* was hit by a single torpedo but was able to get underway. After being hit by dive-bombers from the second wave, the ship was ordered to beach herself. The most lethal blow of the attack was scored by one of the B5N2 level bombers. One of the armor-piercing bombs punched through battleship *Arizona*'s horizontal armor and penetrated to the magazine. The resulting explosion utterly devastated the ship and killed 1,177 men. Other first-wave aircraft neutralized American air power on the island. A total of 174 American aircraft were destroyed during the raid and about as many damaged. No American aircraft ever saw, much less attacked, the Japanese carriers.

While the first wave performed well, the second wave of 167 aircraft enjoyed much less success. Much was expected of the 78 D3A1 dive-bombers tasked to clean up targets in the harbor. This part of the raid was a failure. Even though these were elite pilots attacking, for the most part, stationary targets, the results were dismal. About 15 hits were scored on various targets. Several hits on *Nevada* contributed to the decision to beach her, and three destroyers were destroyed in drydock.

At the end of the attack, 18 USN ships had been sunk or damaged; of these, all but three eventually returned to service. The Japanese suffered much lighter losses than they expected – a total of 29 aircraft. This may appear paltry, but the Americans reacted quickly enough to damage at least another 111 aircraft (Japanese records are incomplete).

Other Combined Fleet Opening Operations

After two days of air bombardment, the Japanese invaded the American possession of Guam in the Marianas on December 10. The operation was conducted under the auspices of the Fourth Fleet in Truk with four heavy cruisers assigned to escort the landing force of 5,000 men. This was a case of overkill since the island was virtually undefended. The weak garrison surrendered on the day of the Japanese landing.

A similar outcome was expected at Wake Island. However, this American possession was defended by a battalion of Marines with coastal defense and antiaircraft guns and a squadron of 12 F4F Wildcat fighters. Flying from the Marshall Islands, the 24th Air Flotilla began a series of pre-landing air attacks on December 8. The first attack destroyed most of the Marine Wildcats. When the landing force showed up on December 11, the IJN expected little opposition. The operation was again under the command of the Fourth Fleet, but this time Vice Admiral Inouye Shigeyoshi underestimated his opponent. The landing force was too weak, being built around the two oldest light cruisers in the IJN, *Tenryu* and *Tatsuta*, experimental light cruiser *Yubari*, and six old destroyers.

Marine gunners were fully alert on the morning of December 11 when the IJN landing force made its appearance. The First Defense Battalion made effective use of its six 5in coastal defense guns and proved again that ships were at a disadvantage attacking land batteries. After allowing the Japanese cruisers to make two firing runs, the Marines opened up as they began a third. *Yubari* was brought under fire but was not hit. However, the lead destroyer, *Hataye*, was hit several times by 5in shells and sank. Two other destroyers were hit by Marine gunners and slightly damaged. The four surviving Wildcats completed the rout of the landing attempt. They strafed and damaged *Tenryu* and sank destroyer *Kisaragi* with all hands.

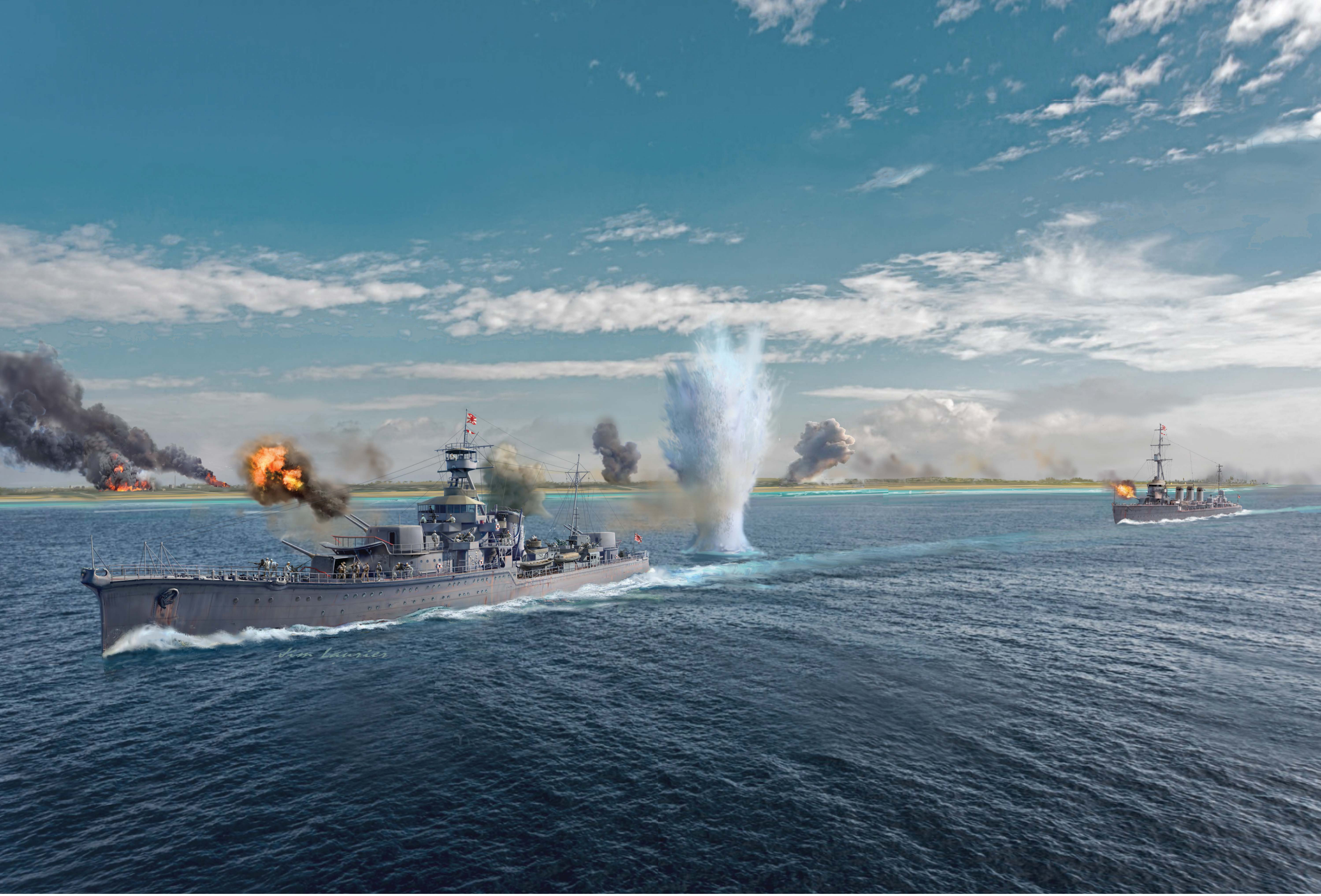
Shocked by the outcome of their first attempt, the IJN detached carriers *Hiryu* and *Soryu*, escorted by two heavy cruisers and two destroyers, from the Pearl Harbor attack force to assist in the second landing attempt. Daily air attacks were mounted by the 24th Air Flotilla to soften Wake's defenses. Elements from the Guam invasion force, including the four heavy cruisers, were also allocated to the second Wake Island invasion. This reinforced invasion fleet departed Kwajalein Atoll in the Marshalls on December 21 and landed its invasion troops in the early morning darkness of December 23. The outnumbered garrison quickly surrendered after a sharp and bitter fight. Unbeknownst to the Japanese, the USN had mounted a relief operation. Had it been resolutely pressed ahead and supported by all three carrier groups available to the Americans, it could have dealt the IJN a serious blow. Not for the last time, a risky Japanese plan was successful in the face of an unprepared enemy.

The largest and most prolonged operation by the IJN against American forces in the opening months of the war was in support of the invasion of the Philippines. The Third Fleet was responsible for destroying USN naval forces in the region, landing the Imperial Army at several sites in the Philippines, and conducting resupply and reinforcement operations. Opposing it was the USN's Asiatic Fleet with one heavy and two light cruisers, 13 destroyers, and 29 submarines. This force has been dismissed by many historians as beyond inadequate, but it did have the potential to disrupt the Japanese invasion of the Philippines.

The Japanese invasion plan was conservative in that it called for a series of landings always conducted under protection of land-based air cover. The main landing was planned to take place in Lingayen Gulf, north of Manila. Forces coming ashore there constituted the northern pincer aimed at the capital. The entire endeavor was made easier by the initial strike of the 11th Air Fleet's 21st and 23rd Air Flotillas flying from bases in Taiwan with the objective of crippling American air power in the Philippines. This formation mounted a massive strike on three airfields with 192 aircraft as soon as the weather permitted on the morning of December 8. Because of American incompetence, the Japanese strike caught the American aircraft on the ground and destroyed half of their vaunted B-17 heavy bombers and more than a third of their fighters. This blow

WAKE ISLAND ATTACK FORCE (overleaf)

The initial IJN landing on Wake Island (and the two adjacent islands of Peale and Wilkes) was the only time a Japanese landing operation was defeated during the entire war. Against the US Marine Corps First Defense Battalion and a squadron of fighters, the IJN dispatched a weak landing force. Two days of air bombardment failed to destroy the Marines' six 5in guns. These were on full alert when the Japanese landing force approached the island on the morning of December 11. The invasion force approached Wake in column, led by light cruisers *Yubari*, *Tatsuta*, and *Tenryu*. The cruisers conducted one firing run, destroying oil tanks on the southwest part of the island, but the Marines held their fire. This is the scene depicted here. As the cruisers closed for a third firing run, the Marine 5in guns open up at 0610hrs. One of the batteries claimed to have hit *Yubari* on its second salvo, but Japanese records fail to confirm this. However, the Marines had much better luck against the column of destroyers moving to protect the transports. The lead destroyer, *Hayate*, was hit by three salvos and blew up with the loss of 168 men. Destroyer *Oite* was also hit and slightly damaged by the same battery. Against another battery, destroyer *Yayoi* was hit, but managed to inflict damage to the offending guns. More havoc was caused to the invasion force when four Wildcats brought it under attack. *Tenryu* was damaged by a strafing attack. *Kisaragi* was also attacked and sunk with all hands after the destroyer's depth charges exploded. The first invasion of Wake had failed and the cost to the IJN was high – two destroyers sunk, several ships damaged, 340 men killed, 65 wounded, and two missing. Determined not to experience another disaster, the IJN returned to Wake on December 23 in much greater strength.


Jim Laurier

gained air superiority for the Japanese and forced the Asiatic Fleet to head south out of the range of air attack.

Beginning on December 8, the IJN conducted a series of landings. The first major landing took place at Aparri in northern Luzon on December 10. After a day's delay, the second landing took place at Vigan in northwestern Luzon. On December 12, a third invasion targeted Legaspi in southeast Luzon. These operations faced small-scale and ineffective air attacks, no reaction from USN surface units, and unsuccessful counterattacks from USN submarines. The first three major landings were conducted to provide support to the main landing planned for Lingayen Gulf. To land an entire division at Lingayen, the Japanese mustered 78 transports covered by strong surface forces. Japanese troops went ashore early on December 22 against minimal resistance on the beach. Weak American air attacks failed to make an impression; the Asiatic Fleet's large submarine force was caught out of position even though the Americans had correctly deduced the location of the main landing. Two days later, the southern pincer of the Japanese effort to capture Manila went ashore at Lamon Bay southeast of Manila.

While the Japanese secured multiple lodgments on Luzon, they also had to suppress USN naval forces in the southern Philippines operating from the base at Davao on the island of Mindanao. A small carrier strike launched from *Ryujo* against Davao on December 8 failed to find any significant naval targets. Davao was seized by a landing force on December 20 against no real resistance. The island of Jolo in the northern NEI was seized on December 25. In less than three weeks, the IJN had successfully placed the Imperial Army ashore at key points in the Philippines and then cut the islands off from reinforcement.

The Southern Offensive

Almost the entirety of the IJN (with the principal exception of the battleships of the First Fleet) was employed at some point during the conquest of British Malaya and Singapore, and the NEI. Just like in the Philippines, Allied naval and air forces were outnumbered, but did have sufficient power to disrupt and delay the Japanese timetable of conquest of the southern resource areas that were vital for Japan's prospects. Most troubling for the IJN was the Royal Navy's movement of the modern battleship *Prince of Wales* and the dated battlecruiser *Repulse* to Singapore in the days before the start of the Japanese attack (this force was given the designation Force Z). With *Haruna* and *Kongo* (as well as most of the heavy cruisers of the Second Fleet and two destroyer flotillas) assigned to the southern operation, the IJN had sufficient firepower to deal with Force Z, but the Japanese preferred to use air power to deal with the British capital ships. The 22nd Air Flotilla had been specially trained and equipped with 99 long-range bombers capable of carrying torpedoes for attacking surface ships. Based on southern Indochina, this force had the range to attack far into the South China Sea.

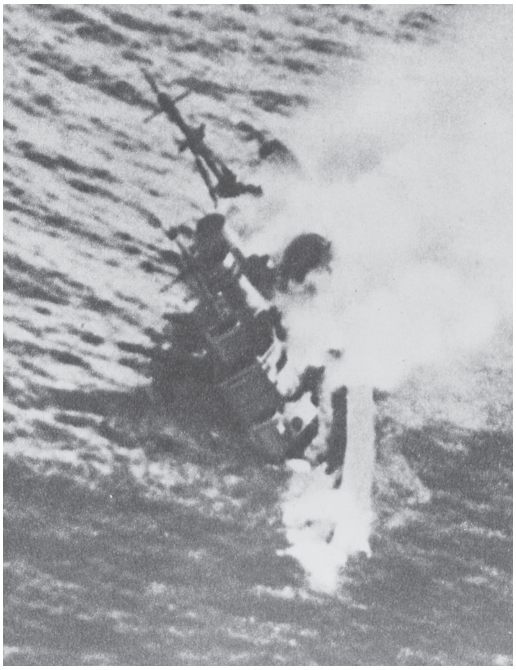
Concurrent with the attack on the Philippines, the Japanese moved against Malaya on December 8. Two spots were chosen in southern Thailand and one on northern Malaya for the initial landings. The Royal Air Force made an all-out effort to attack the landings, but within two days the Japanese Army and Navy air forces not only protected the landings but gained air superiority over northern Malaya. Things got much worse for the British when the 22nd Air Flotilla spotting Force Z at sea on December 10. An attack force of 85 bombers was dispatched, 51 armed with torpedoes. The torpedoes proved decisive – six hit *Prince of Wales* and five hit *Repulse*, sinking both. At the cost of three aircraft, the IJN had tilted the naval balance in Southeast Asia firmly in the favor of the IJN. The only other British attempt to use naval forces in the defense of Singapore came on January 27 when two RN destroyers were sent to attack a small Japanese landing force off southeastern Malaya. The two antiquated destroyers were intercepted by a force of IJN Fubuki-class destroyers. With no damage to themselves, the Japanese sank one British destroyer and forced the other to return to Singapore. On February 15, Singapore surrendered.

The Japanese plan to conquer the NEI unfolded concurrently with the advance down Malaya toward Singapore. The IJN planned two drives into the NEI with the ultimate goal being the main island of Java. The pace of the operations was swift to keep the Allies off balance. No advance would be conducted without cover from land-based air forces. The rapid pace, effective air cover, and weak Allied naval and air forces proved decisive.

During the NEI campaign and the Japanese advance toward Java, a total of three surface actions were fought between Allied naval forces and the IJN. In addition, the IJN's air force twice attacked the main Allied striking force at sea. While sinking no ships, the air attacks forced the Allied force to break off its mission and proved how difficult it was for surface forces to operate in daylight in skies dominated by enemy aircraft.

The first naval action was the only occasion during the campaign that the IJN suffered a tactical defeat. In response to the Japanese landing at Balikpapan on Borneo, the USN Asiatic Fleet dispatched a surface force to attack the invasion fleet. Only four World War I-era destroyers were available. The Americans evaded a much larger IJN covering force and succeeded in attacking the transports during the early hours of January 24, sinking four and a patrol boat. No real damage was suffered by the Americans, but the tactical victory did not stop or delay the Japanese advance.

The next two attempts to stop the Japanese advance were thwarted by Japanese air power. On February 4, the Allied striking force was spotted en route to attack the Japanese invasion force bound for Makassar in the Celebes. An attack by 60 bombers damaged *Marblehead*

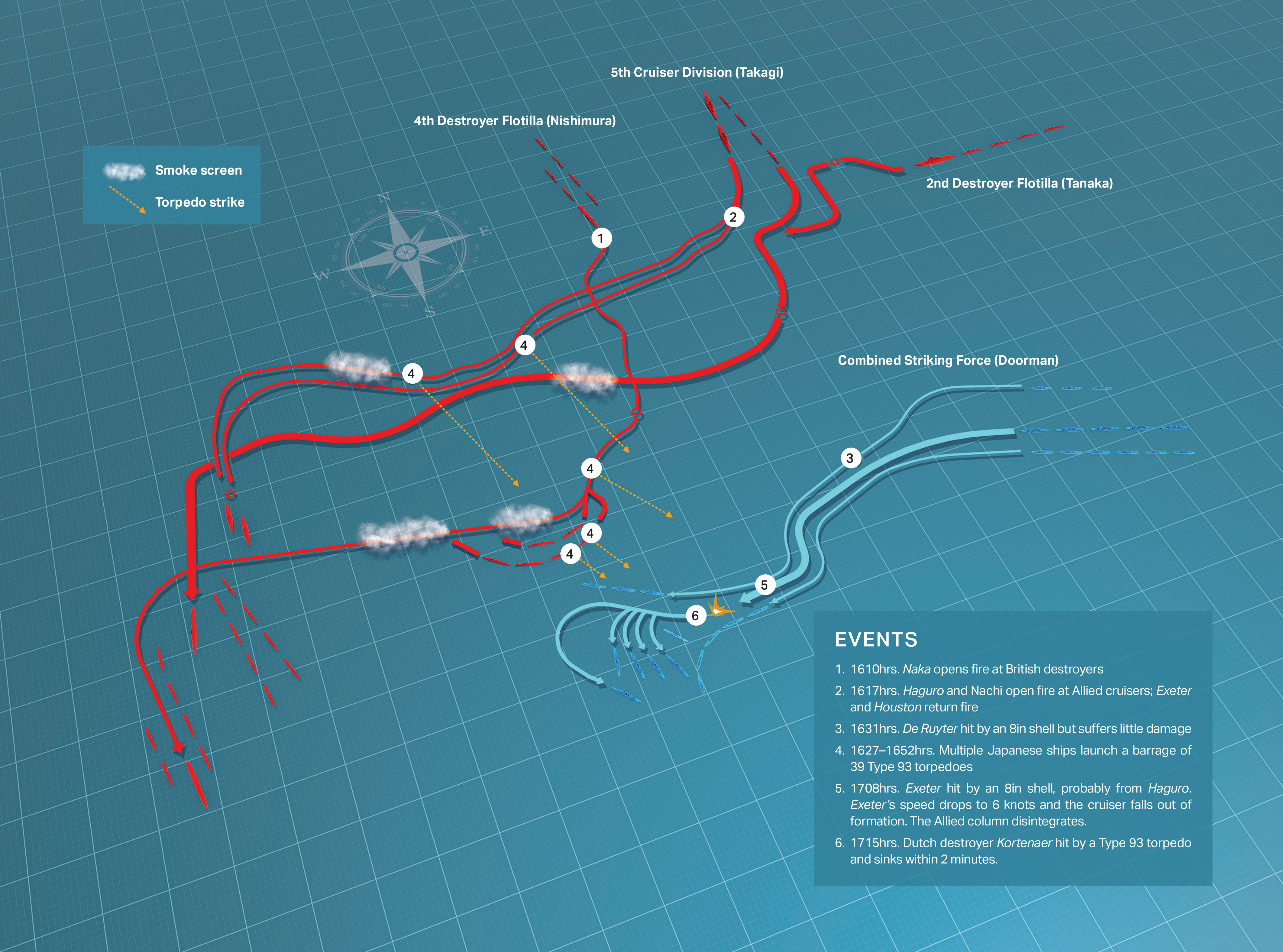


In the series of surface actions during the NEI campaign, the Combined Fleet came out on top with the single exception of the battle of Balikpapan early in the campaign. Among the many Allied ships sunk during the campaign was RN heavy cruiser *Exeter*, seen here rolling over on March 1, 1942 in a hopeless battle against a far superior Japanese force. Throughout the NEI campaign, the Combined Fleet never lost a major combatant in a surface engagement. (Naval History and Heritage Command) so badly that the light cruiser was sent out of the theater for repairs, and also damaged heavy cruiser *Houston* by knocking the aft triple 8in turret out of action. The Japanese had no torpedoes available to fit on these bombers, or else the result might have been worse for the Allies. Japanese air power made itself felt again when the Allies identified an invasion force headed for Sumatra. On February 15, the Allied force of five cruisers and ten destroyers was subjected to a day-long bombardment by IJN carrier- and land-based aircraft and forced to return. The next surface action occurred in the Badoeng Strait after the Allies reacted to the Japanese invasion of Bali Island, which was an immediate threat to Java. Here was a clear chance for the Allies to inflict a blow on the Japanese. The invasion force comprised only two transports escorted by four Asashio-class destroyers. The Allied response was disjointed, but with three cruisers and seven destroyers they outnumbered the Japanese. Even with this advantage, the smaller IJN force outfought the Allies, displaying for the first time the IJN's prowess in night fighting. The transports were not touched by the Allied naval force, one Dutch destroyer was sunk, one Dutch light cruiser damaged and forced to Australia, and one USN destroyer was also damaged and forced back to base for repairs. In return, three of the four IJN destroyers were damaged, one severely.

The climactic Japanese invasion of Java was scheduled for late February. Two invasion convoys approached the island from the east and west. For their final attempt to turn the western invasion force back, the Allies mustered a combined force of five cruisers and nine destroyers. Covering the convoy was a Japanese force of heavy cruisers *Haguro* and *Nachi* and two destroyer squadrons with two light cruisers and 14 destroyers. In the largest naval battle of the Pacific War to date, fought for over eight hours on February 27, the IJN inflicted a decisive defeat on the Allies. The opening phase of the battle featured a long-

THE COMBINED FLEET AT THE BATTLE OF JAVA SEA

The battle of the Java Sea, fought on February 27, 1942, was one of the largest surface engagements of the war and provides an excellent example of the Combined Fleet putting its pre-war doctrine into action. The Japanese force comprised two heavy cruisers and two destroyer flotillas. The two cruisers mounted a total of 20 8in guns and all ships present carried Type 93 torpedoes. Per doctrine, the heavy cruisers opened fire at extended range – 28,000 yards. This proved ineffective. Only a single hit was scored, and this was a dud. Next, the Japanese maneuvered to bring their torpedoes into play. Between 1634hrs and 1652hrs, 39 Type 93 torpedoes were fired by *Haguro*, *Naka*, and several destroyers from ranges between 15,000 and 22,000 yards. The results were disappointing, but one weapon struck a Dutch destroyer. It sank in under two minutes. Following the torpedo attack, the long-range gunnery duel resumed. Of 1,271 8in rounds fired by the two Japanese heavy cruisers, only three hit a target. One was the aforementioned dud. Another dud hit American heavy cruiser *Houston*, and, at 1708hrs, a shell struck British heavy cruiser *Exeter*. This was a critical hit; damage to *Exeter*'s boiler room forced the cruiser out of the battle. As *Exeter* left the column, the Allied force disintegrated into confusion. During the first phase of the battle, the Japanese doctrine of hitting from long range brought some results but was not decisive.


5th Cruiser Division (Takagi)
4th Destroyer Flotilla (Nishimura)
Smoke screen
Torpedo strike
2nd Destroyer Flotilla (Tanaka)
N
E
S
W
1
2
4
4
4
4
4
4
Combined Striking Force (Doorman)
3
5
6

EVENTS

1. 1610hrs. *Naka* opens fire at British destroyers
2. 1617hrs. *Haguro* and Nachi open fire at Allied cruisers; *Exeter* and *Houston* return fire
3. 1631hrs. *De Ruyter* hit by an 8in shell but suffers little damage
4. 1627–1652hrs. Multiple Japanese ships launch a barrage of 39 Type 93 torpedoes
5. 1708hrs. *Exeter* hit by an 8in shell, probably from *Haguro*. *Exeter's* speed drops to 6 knots and the cruiser falls out of formation. The Allied column disintegrates.
6. 1715hrs. Dutch destroyer *Kortenaer* hit by a Type 93 torpedo and sinks within 2 minutes.

range gunnery duel that caused slight damage to either side. Adhering to their doctrine, the Japanese followed up with a massive Type 93 torpedo barrage from long range. This attack was mounted beyond a range that the Allies would expect, and the Japanese expected decisive results. Despite firing 39 torpedoes, only one Dutch destroyer was hit and sunk.

A hit from *Haguro* on the RN heavy cruiser *Exeter* at 1708hrs was the most important of the entire battle. The hit penetrated to the boiler room and reduced *Exeter*'s speed to 11 knots. As *Exeter* swung out of column, the Allied formation disintegrated. The Japanese admiral took the opportunity to press the attack with another massed torpedo attack, this time with an amazing 98 Type 93 torpedoes. Most were launched at long range, and amazingly, none found a target. Meanwhile, in a gun duel between destroyers, one British destroyer was sunk.

Even as darkness approached, the Dutch admiral in command of the Allied force refused to break off the battle. It was imperative that the invasion convoy be located and destroyed. By this point, he was down to four cruisers and five destroyers. The second British destroyer hit a "friendly" mine and sank, and after expending their torpedoes, the four USN destroyers returned to base. Left with only four cruisers, the Allied force continued to search for the invasion convoy. When the main Japanese force located the Allied cruisers in the darkness, it launched a final barrage of 12 Type 93s. Just before midnight, two of these found their targets and brought the battle to a close. One Type 93 hit Dutch cruiser *Java*, and the other hit cruiser *De Ruyter*. This was enough to sink both poorly protected Dutch ships. The battle of the Java Sea was a complete victory for the IJN. Of the 32 ships that took part, five were sunk, all Allied.

The rout of Allied naval power in the NEI was completed as remaining Allied ships attempted to flee from Java. *Houston* and Australian light cruiser *Perth* attempted to flee by way of the Sunda Strait on February 28. The two cruisers ran right into the Japanese western invasion force. Because IJN deployment was poor, the two cruisers found themselves in a position to attack the invasion convoy as it was in the process of landing its troops. When the IJN finally did react, it did so in a chaotic way. Torpedoes meant for the Allied ships instead hit and sank five of their own transports. It took a considerable amount of time for a much more powerful force to sink the two Allied cruisers; overall this was a poor performance by the Japanese. A Dutch destroyer trying to flee the NEI was sunk the following day off the coast of Sumatra by two Japanese destroyers.

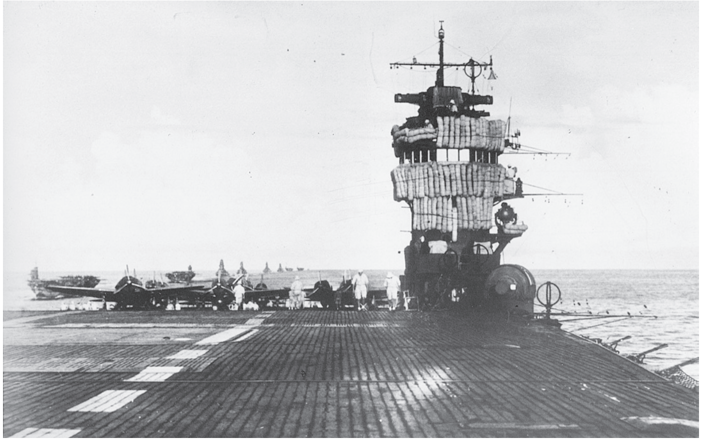
Also on March 1, four USN destroyers escaped through the narrow Bali Strait. Four Hatsuharu-class destroyers detected the fleeing Americans but failed to pursue aggressively, allowing the American ships to make good their escape. The final group of Allied ships attempting to depart the Java Sea comprised the repaired *Exeter*, and one American and one British destroyer. The Allied force was spotted by Japanese aircraft and quickly boxed in by an IJN force led by four heavy cruisers. In an unequal daytime fight, *Exeter* was hit by an 8in shell that brought the cruiser to a stop; less than an hour later *Exeter* had sunk. Both destroyers were scuttled after being damaged. No damage was suffered by the IJN.

Indian Ocean Adventure

The *Kido Butai* was employed in the final stages of the NEI campaign. *Hiryu* and *Soryu* were the first to make an appearance by striking targets in the eastern NEI as early as January 24. The other four carriers conducted a major strike on Darwin on February 19 with 188 aircraft. Neutralization of Darwin was important to the Japanese since it was the source of Allied air reinforcements from the east for the NEI. This was another occasion of the IJN bringing overwhelming firepower to bear on a poorly defended target. The raid sank eight Allied ships and destroyed 18 aircraft. Another display of overkill was rendered on March 5 when the *Kido Butai* attacked Tjilatjap, wrecking the last major port open to the Allies on Java.

The next operation by the *Kido Butai* was its second largest of the war, only smaller in the number of carriers involved than the Pearl Harbor operation. All six carriers would have been involved, but *Kaga* hit an uncharted reef at Palau on February 9 and was forced to return to Japan for permanent repairs. In addition to the five carriers, all four Kongo-class battleships operated together for the only time in the war. Another force built around carrier *Ryujo* along with five heavy cruisers, one light cruiser, and four destroyers was formed to attack shipping in the Bay of Bengal. The objective of this large force was to protect the flank of the Japanese invasion of Burma and the movement of forces by sea into Rangoon. To do this, the RN's Indian Ocean force had to be neutralized. After the fall of Singapore, the focus of British naval power in the region had moved to Ceylon. The IJN planned a Pearl Harbor-style raid against Colombo and Trincomalee on Ceylon to cripple the RN's Far Eastern Fleet. The British did have large naval forces in the region but few modern ships.

The British commander possessed intelligence that a large IJN carrier force would hit Ceylon as early as April 1. This accurately described Japanese intent but the date was wrong. When the Japanese were spotted on April 4 south of Ceylon, British forces were out of position. Colombo was the *Kido Butai*'s first target – 127 aircraft were sent to hit it on the morning of April 5. The naval facilities were severely damaged and 27 British aircraft destroyed. Targets were few in the harbor, but a destroyer and an armed merchant cruiser were sunk. Only seven Japanese aircraft were lost.



One of the *Kido Butai*'s largest operations during the opening months of the war was the Indian Ocean raid in April 1942. This photo, taken from *Akagi*, clearly shows the power of the *Kido Butai*. Behind *Akagi* are *Soryu*, *Hiryu*, the four Kongo-class battleships, and then the two Shokaku-class carriers. (Yamato Museum)

More damaging to the British was the loss of heavy cruisers *Cornwall* and *Dorsetshire* in the early afternoon. Spotted by a Japanese floatplane from one of the *Kido Butai*'s escorting heavy cruisers, they were attacked and sunk by 53 dive-bombers. *Cornwall* suffered nine hits and six near misses, while *Dorsetshire* recorded ten hits and many near misses.

On April 9, the *Kido Butai* attacked Trincomalee in eastern Ceylon. The British had cleared the harbor of ships, but the naval facilities were damaged. When light carrier *Hermes* was spotted in the morning south of Trincomalee, 85 dive-bombers were dispatched to deal with the threat. In an even more dazzling display of bombing prowess, 37 of the 45 dive-bombers that attacked the carrier claimed hits – a claim backed up by British accounts. The remaining dive-bombers sank four other ships located nearby. The only blight on the *Kido Butai*'s performance occurred in the morning when nine Royal Air Force Blenheim bombers appeared over the carriers undetected. Untrained for attacking maritime targets, they inflicted no damage on the surprised Japanese, and five of the aircraft were shot down.

Defeat at Coral Sea

The excellent harbor at Rabaul on New Britain island was captured on January 23 by forces including the *Kido Butai*. When the Japanese decided to seize additional locations in the South Pacific, Rabaul provided an excellent staging point and was developed into a major fleet base. Its importance was such that it became a focal point of the Pacific War until late 1943.

Of all the USN carrier raids in the war's first few months, the raid by carriers *Yorktown* and *Lexington* against a Japanese naval force off Lae on the coast of northeastern New Guinea on March 10, 1942 was the most impactful. The raid did minor damage to the invasion fleet, sinking only a few auxiliaries, but it had the result of temporarily stopping further Japanese advances in the South Pacific. The appearance of USN carriers in the Coral Sea meant that future IJN moves would have to be covered by fleet carriers. This was the genesis of the battle of the Coral Sea fought in May. It became the world's first carrier battle and the first major defeat for the IJN.

As the situation in the South Pacific developed, Yamamoto was focused on the Central Pacific where he planned an advance on Midway Atoll to draw the USN's Pacific Fleet to its final destruction. He should have been massing the Combined Fleet's strength for this mission, especially its carriers, but agreed to support a further advance into the South Pacific to seize Tulagi in the Solomon Islands and Port Moresby in southern New Guinea in early May. He allocated fleet carriers *Shokaku* and *Zuikaku*, and light carrier *Shoho* for this endeavor because it looked easy and because he expected the carriers to be returned in time for the Midway operation. Overall, the operation included 60 ships and some 250 aircraft. As usual, these were divided into several forces. On May 10, these would deliver an invasion force at Port Moresby.

The Combined Fleet's first major defeat was suffered at Coral Sea in May 1942 at the hands of the USN. Poor operational planning and force allocation were behind the defeat. This is fleet carrier *Shokaku* under attack from American carrier-based dive-bombers. (Naval History and Heritage Command)

Space precludes anything like a full description of this well-known battle, but what most accounts of the battle fail to highlight is that the IJN's carrier force had the opportunity to launch a devastating strike on the unsuspecting USN carrier force on May 6 and 7. On May 7 in particular, the Americans were fortunate that Japanese reconnaissance and communications efforts were so unbelievably bad. When the carrier battle finally took place on May 8, both sides were badly battered. *Lexington* was damaged and later lost to a material defect and *Yorktown* suffered moderate damage and was forced to withdraw. The Japanese claimed both carriers sunk, a dangerous fantasy they came to regret only a month later.

For the Japanese, results of the battle were catastrophic. The IJN suffered its greatest losses of the war to date. *Shoho* was sunk, making this the largest IJN ship lost in the war. *Shokaku* was badly damaged by bombs and was forced to return for repairs that took until July 1942. Heavy aircraft losses to *Zuikaku*'s air group meant the carrier was also out of action until August. With no air cover for the invasion convoy, the Japanese were forced to cancel the landing at Port Moresby. The IJN had suffered its first major defeat of the war.

Disaster at Midway

Yamamoto allocated virtually every ship in the Combined Fleet for the Midway operation. In total, this included eight carriers, 11 battleships, 14 heavy cruisers, nine light cruisers, 61 destroyers, and 20 submarines. This formidable collection was dispersed into 15 separate entities spread out from Midway up to the Aleutian Islands. The only force that really mattered was the First *Kido Butai* with its four carriers, two battleships, two heavy cruisers, one light cruiser, and 11 destroyers. The carriers had the dual missions of neutralizing Midway and attacking any USN naval forces that made an appearance. Midway was the lure in Yamamoto's grand plan. After it was captured, he assumed the USN would sortie from Pearl Harbor to give battle only to be destroyed off Midway when the massed Combined Fleet concentrated to destroy the Americans in a decisive battle. The Americans did not need Yamamoto's prodding to accept a fight. With advance notice of at least the broad outline of Yamamoto's plan, the USN packed Midway with aircraft and sent its three available carriers northeast of the atoll to ambush the unsuspecting Japanese.

The convoluted carrier battle on June 4 developed in the manner generally planned by the Americans. In their initial strike, American carrier aircraft hit *Akagi*, *Kaga*, and *Soryu*, all of which later sank. *Hiryu* managed to launch two strikes against *Yorktown*; the damage inflicted led to the carrier's eventual loss. In turn, *Hiryu* was located and sunk by a late-afternoon USN carrier strike. At this point, the battle was essentially over when the American commander cautiously remained out of the reach of the IJN's much superior surface forces.

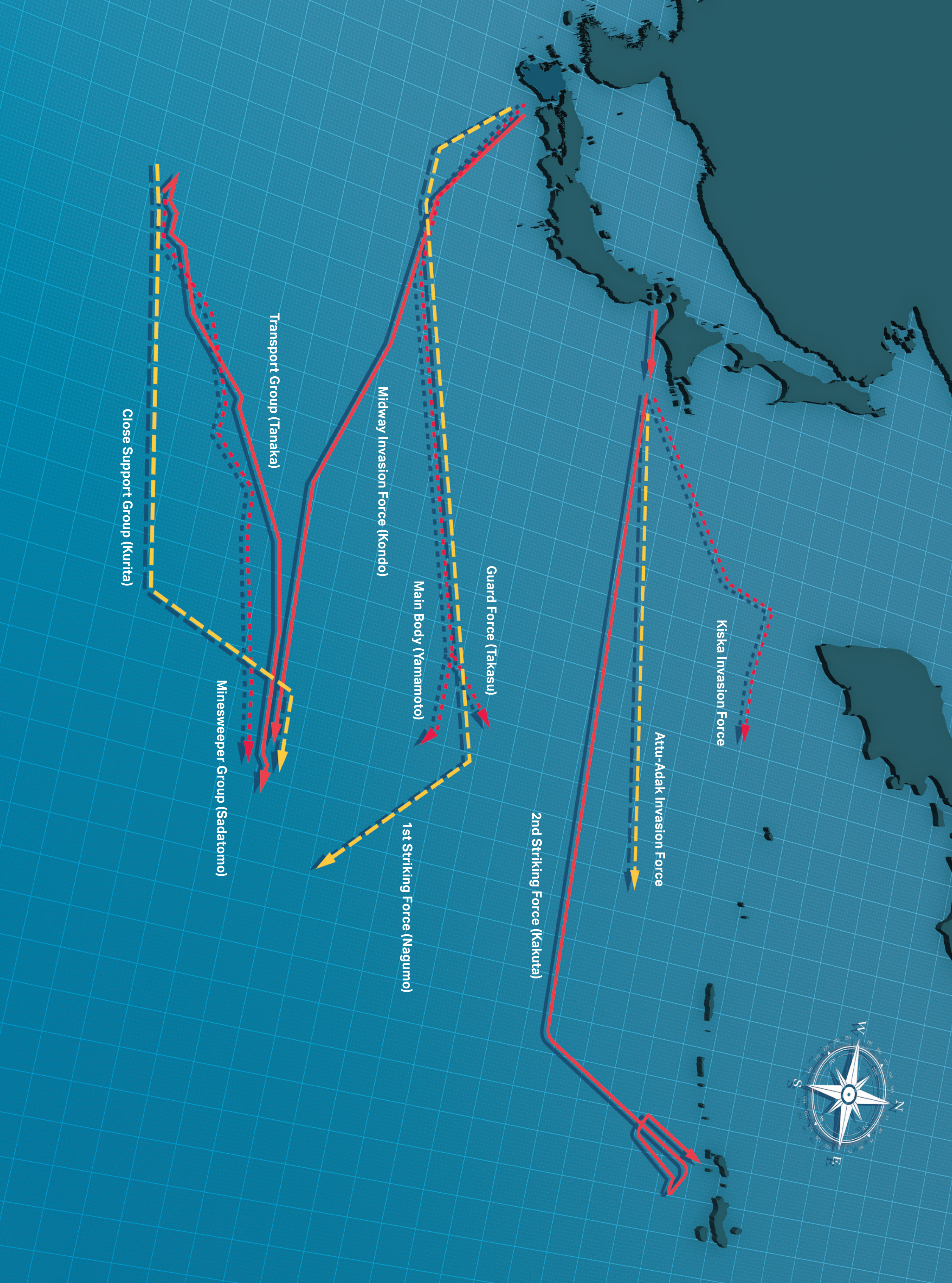
Disaster at Midway ended the period of Japanese expansion. The IJN lost its edge in carriers as well as the initiative in the Pacific. The next phase of the war featured the Japanese reacting to an American offensive. Midway was not the end of the IJN as an effective force, or even an end to the IJN's carrier force, but it did throw the Japanese on the defensive. The zenith of the IJN had passed.

ANALYSIS

The Combined Fleet experienced an almost unprecedented run of victories from the opening of the war until April 1942. Against weak Allied forces, the Japanese used their initial numerical and qualitative advantages to spearhead a rapid campaign of expansion beginning in December 1941. Lacking detailed intelligence on their opponents, the Japanese simply assumed they lacked the prowess of the IJN and that they would be unable to respond to the speed of Japanese operations. Though the Japanese advanced at a reckless pace, taking significant risks in the process, their pre-war assumptions turned out to be accurate.

COMBINED FLEET DISPOSITIONS AND PLANNING FOR THE BATTLE OF MIDWAY

The Combined Fleet employed most of its strength in Yamamoto's bid to seize Midway Atoll and force the Pacific Fleet into a decisive battle. His forces greatly outnumbered those available to Nimitz. However, the Japanese advantage was squandered by Yamamoto's dispersion of forces over a vast chunk of the Pacific Ocean. This chart shows the principal Japanese forces involved in the operation; several smaller forces and submarines are not included. A significant force dispersal was created by the concurrent operation to seize objectives in the Aleutians. A total of two carriers, six cruisers, 13 destroyers, six submarines, and 16 auxiliaries were allocated to this strategic dead end. Spearheading the operation was the First *Kido Butai* with only four of its original six fleet carriers. It had the dual mission of neutralizing Midway and any American ships discovered in the area. The fatal flaw in Yamamoto's plan was that the carriers were doomed to fight unsupported. All other Combined Fleet elements were too far away because Yamamoto feared that their discovery might discourage the Americans from accepting battle. These included light carrier *Hosho*, seven battleships, three light cruisers, and 20 destroyers assigned to the Main Body and Guard Force. The Midway invasion force was covered by another massive force including light carrier *Zuiho*, two battleships, eight heavy cruisers, one light cruiser, and 21 destroyers. The folly of Yamamoto's deployment was amply demonstrated by the simple fact that the First *Kido Butai* fought outnumbered both in ships and aircraft. It was defeated before any other Combined Fleet task force was able to support it directly.


Close Support Group (Kurita)
Transport Group (Tanaka)
Minesweeper Group (Sadatomo)
Midway Invasion Force (Kondo)
Main Body (Yamamoto)
Guard Force (Takasu)
1st Striking Force (Nagumo)
2nd Striking Force (Kakuta)
Attu-Adak Invasion Force
Kiska Invasion Force
W
S
N
E

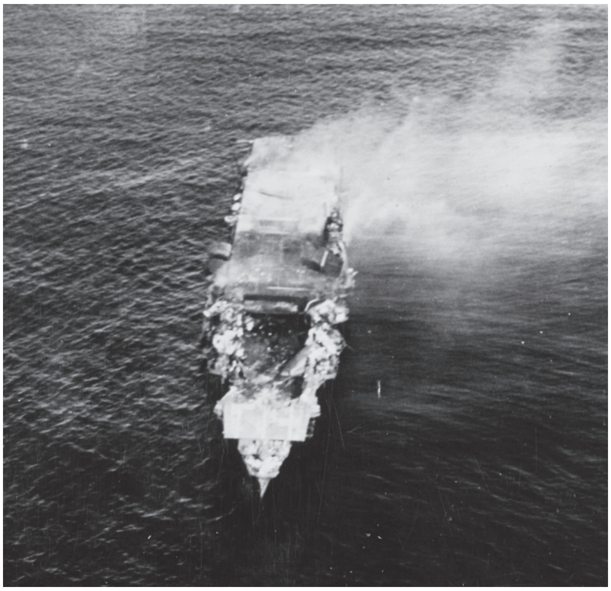
At Pearl Harbor, the IJN enjoyed a smashing victory, but it was not the decisive victory Yamamoto was counting on or that legend portrays. Tactically, the attack was well executed for the most part, primarily because of the unready status of the defenders. However, the haul of ships sunk and damaged (18) was relatively small, and all but three of these returned to service. Four USN battleships were among the ships forced out of service for prolonged periods, but this benefited the IJN little since they were incapable of conducting operations with the American carrier force or in high-threat areas. Operationally, the attack gained the IJN little, not merely because the Pacific Fleet was not crippled, but because the Pacific Fleet lacked the capability to threaten the Japanese advance into the resource-rich areas of Southeast Asia. Strategically, the attack was an unmitigated disaster as it brought the United States into the war with a unified determination to crush the Japanese. Had the Japanese, and especially Yamamoto, been more cerebral, the wise course of action would have been to forgo the attack. If nothing else, the attack did demonstrate the striking power of the IJN's carrier force.

While the Pearl Harbor attack was spectacular, the conquest of Southeast Asia was the IJN's principal mission during the first three months of the war. The first test was the invasion of the Philippines. The IJN's conduct of the operation was solid and it was conducted with almost no losses. Employing a relentless pace, the main naval operations were over in less than three weeks; the successful insertion of the Imperial Army on Luzon and the prevention of significant American reinforcement to the Philippines guaranteed Japanese success.

Much more challenging were the campaigns to seize Malaya and the NEI. This mission required a massive force – the Southern Expeditionary Fleet was allocated two battleships, 11 heavy cruisers, four light cruisers, and some 52 destroyers. This was clearly superior to any force the Allies could assemble in the region. However, the rapid pace of IJN operations and their breadth meant these forces were never fully concentrated. This left the Allies with potential openings to mount damaging attacks on any of the many Japanese invasions during the campaign. Luckily for the Japanese, the Allies were never able to seize any of those opportunities to deal the IJN a piecemeal defeat.

Overall, the Combined Fleet performed well during the Malaya and NEI campaigns. Both areas were seized quickly, which provided Japan with the resources essential to carrying on the war. No Japanese landing was stopped or even delayed because of the actions of Allied naval forces. In the process of the campaign, the

Midway was an unparalleled disaster for the IJN. Yamamoto's sloppy and arrogant operational planning squandered the Combined Fleet's significant numerical advantage over the Pacific Fleet and set the stage for defeat. Fighting alone, the *Kido Butai* lost all four of its fleet carriers. This is *Hiryu* on fire on June 5, 1942, the day after the carrier battle. (Naval History and Heritage Command)



Dutch Navy was virtually annihilated, the Asiatic Fleet suffered serious losses, and the RN lost a heavy cruiser and four destroyers. The Australians also lost a light cruiser. In return, the IJN suffered minimal losses, certainly much less than it expected. The largest combatant lost was a destroyer – in total, three were lost, two to submarine attack and one to Dutch air attack. Other losses included a submarine, four minesweepers, a patrol boat, and at least 14 transports.

Operationally, the IJN did not perform flawlessly. The propensity to disperse forces could have cost it severely had the Allies handled their slender resources better. At one point, the weakest of the four main IJN forces in the region was left to contend with the strongest Allied naval force. In a situation in which the IJN had overwhelming superiority, this poor force deployment had no significant consequences, but such risky planning would have consequences in the future.

Tactically, the IJN performed better than the Allies, but there were still causes for concern. At the biggest battle of the campaign, Java Sea, the performance of the IJN's secret war-wining weapon – the Type 93 – proved disappointing. Of 153 torpedoes fired, only three hit a target, with dozens detonating prematurely. To be fair, these three torpedoes accounted for three Dutch ships. Whatever problems the Type 93 had at Java Sea, IJN torpedo tactics were solid and, after fine-tuning, the Type 93 became a formidable weapon. Another problem area was long-range gunnery. The IJN trained extensively at long-range gunnery and expected 6 percent of 8in shells to hit even at long range. This proved wildly optimistic as demonstrated on two occasions. At Java Sea, only five of 1,619 8in shells hit. In the action that sank *Exeter*, only two hits were scored of 1,171 rounds. Long-range gunnery was a problem for both sides, but the IJN never achieved acceptable results since it failed to incorporate radar into its gunnery tactics. Whatever its shortcomings, the IJN proved during the NEI campaign that its ships were better armed, had better-trained crews, and were almost always better handled than its Allied counterparts.

The IJN also showed itself to be expert in handling carrier air power. The *Kido Butai* had better aircraft, better torpedoes, and displayed better deck-handling abilities than the USN's carrier force. It also possessed the advantage of having more carriers. Nevertheless, the IJN's carrier force was defeated by the end of the first six months of the war. Had Yamamoto kept the *Kido Butai*'s core of six fleet carriers intact, it is hard to see how the USN could have contended with it.

Before meeting the USN, the *Kido Butai*'s ability to bring mass air power in the form of modern aircraft flown by experienced pilots had brought it an uninterrupted string of victories. From November 26 until the end of the Indian Ocean raid, the *Kido Butai* ran amok scoring victories at Pearl Harbor, Rabaul, Darwin, and at Colombo and Trincomalee. None of the *Kido Butai*'s ships had even been damaged, and sightings of them by Allied aircraft were rare.

Another dimension of IJN air power has been underplayed. At the start of the war, only the IJN had a land-based air force with powerful strike capabilities. This force reached its zenith on December 10 with the sinkings of *Prince of*

Wales and *Repulse* off Malaya. It could not repeat this success against other Allied naval forces during the NEI campaign, but it demonstrated that it was an important IJN capability that could not be ignored by the Allies.

Eventually, the success of the IJN and its growing appetite for expansion led to it being overstretched. This was first manifested at Coral Sea in May 1942. Yamamoto made the success of the decisive battle he was planning at Midway hostage to the subsidiary operation in the South Pacific. The two fleet carriers sent to support the operation constituted the *Kido Butai*'s edge in a carrier clash with the Pacific Fleet. All three Japanese carriers sent to the Coral Sea were sunk or otherwise made unavailable for the Midway operation. This turned the defeat at Coral Sea into a strategic disaster.

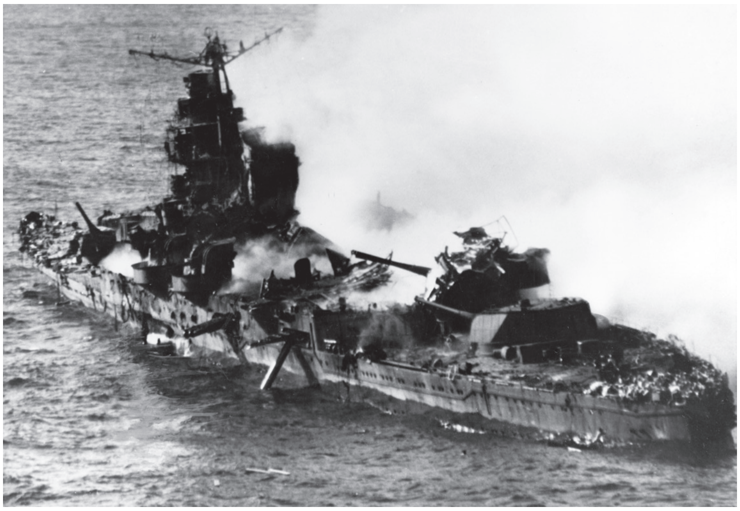
The Combined Fleet plan at Coral Sea depended on the close coordination of widely separated elements to succeed. Previous Japanese operations were all dependent on the availability of land-based air cover, and they were all successful. In the Port Moresby operation, this was not the case and air defense of the invasion convoy relied on a meager 12 fighters from light carrier *Shoho*. The invasion would likely have failed even if the carrier battle on May 8 had gone better for the IJN.

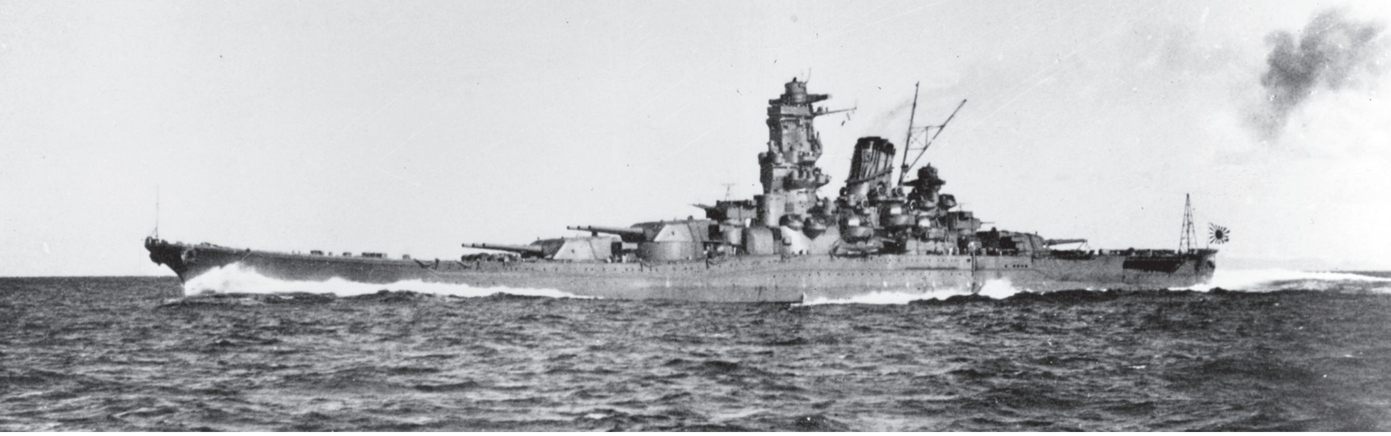
Yamamoto let his carrier force be exposed to defeat in detail at Coral Sea. This significantly weakened the *Kido Butai* on the eve of the great decisive battle at Midway. Despite mounting the IJN's largest operation of the war to date, Yamamoto spread his forces over a huge chunk of the Pacific Ocean and left the *Kido Butai* to fight unsupported. At a time when the Combined Fleet possessed significant numerical advantages in every ship category over the Pacific Fleet, this excessive force dispersion resulted in the *Kido Butai* fighting outnumbered with its 20 ships and 248 aircraft. The USN massed its resources and placed them in the best position to ambush the Japanese carriers with the support of aircraft from Midway. At the point of contact, the USN mustered 26 ships and a total of 348 aircraft (including those on Midway).

The IJN's various fleet components displayed varying degrees of effectiveness. Despite its centrality in IJN strategy and doctrine, the battleship force contributed almost nothing in the opening months of the war. Aside from the Kongo class, the battleships rarely departed from the Inland Sea.

Without a doubt, Japanese naval air power was decisive in the war's first few months. Both Japanese carrier-based and land-based strike aircraft

The Mogami class was very active during the first few months of the war and saw combat against American and British ships during the NEI campaign. During the battle of Midway they were ordered to shell Midway Atoll. This exposed them to American air power with the results shown here. *Mikuma* was the first Japanese heavy cruiser sunk during the war. (Naval History and Heritage Command)





Yamato was commissioned within days of the Pearl Harbor attack. For the IJN, the ship's arrival meant that it had achieved a qualitative overmatch against any rival USN battleship. Unfortunately for the Japanese, they had no opportunity to employ *Yamato*'s combination of firepower and protection. (Naval History and Heritage Command)

exacted a heavy toll of Allied ships during this period. The execution wrought by the carrier-borne torpedo bombers at Pearl Harbor and the land-based bombers against Force Z in the South China Sea altered the naval balance in the Pacific. However, the IJN's air force was fragile. When it faced real fighter opposition and the much more effective antiaircraft fire from USN carrier task forces, losses mounted sharply. This meant that aircrew losses were correspondingly heavy. At Coral Sea, though the Japanese carrier aircraft were able to damage both USN carriers (one of which later sank), losses were very high – 69 carrier aircraft. Neither of the carrier air groups left the battle in any shape to take part in the Midway operation. At Midway, only one of the four IJN air groups present had a chance to attack an American ship. *Hiryu*'s air group launched two successful strikes on *Yorktown* but was virtually annihilated in the process.

Even the land-based bomber force struggled to replicate its opening success on December 10 against Force Z. In the NEI campaign, it failed to score a spectacular success but did damage many other ships and paralyzed Allied naval operations at key points in the campaign. At Coral Sea, a single attack against a well-handled Allied naval task force with better antiaircraft capabilities than Force Z resulted in the loss of five out of 12 G4M aircraft conducting torpedo attacks (19 G3Ms using bombs also failed to score a hit) and no damage to any Allied ships. Both the IJN's carrier- and land-based air forces faced a period of steady decline after the first six months of the war until they finally became irrelevant.

Combined Fleet surface forces proved themselves early in the war. IJN heavy cruisers were the spearhead of the Japanese drive into the NEI. They were excellent offensive platforms, especially with their large torpedo battery. Their weaknesses were not exposed early in the war – weak antiaircraft capabilities and inadequate underwater protection schemes. The decision to carry torpedoes on heavy cruisers looked like a good one when the IJN was on the offensive; when on the defensive, it directly led to the loss of three ships and severe damage to two others.

Japanese destroyers performed well in their primary mission of surface warfare but were less successful against enemy submarines. At this point in the war, they were not subjected to intense air attack, so their primary weakness had yet to be revealed. Losses were extremely light in 1941 and the first six months in 1942 even though destroyers were present in every IJN operation during the early-war period.

The IJN placed a high priority on mine warfare, driven by the prominent role that mines played in the Russo-Japanese War. Several classes of purpose-built minelayers and minesweepers were in service at the start of the war, and these were supplemented by a large number of civilian conversions. This is Minesweeper No. 15 in October 1940 after receiving modifications to improve stability. Japanese mine warfare ships were heavily armed and were suited for general escort and patrol duties. Minesweeper No. 15 was equipped with two 4.7in single mounts and spent most of the war as an ASW escort. (Yamato Museum)

IJN submarines greatly underperformed in the first few months of the war. This was evident in the results of the 27 boats sent out to Hawaii at the start of the war. In 1942, the IJN failed to develop a coherent submarine employment strategy. Bound up in the pre-war decisive battle concept, most operations were mounted in direct support of the Combined Fleet's operations. Against the defenses of the USN's primary task forces, the results were disappointing. There were exceptions – the torpedoing of carrier *Saratoga* in January 1942 that kept the carrier out of the battles of Coral Sea and Midway, and the sinking of *Yorktown* at Midway. Some fleet boats were devoted to commerce raiding operations after Pearl Harbor, but the poor results of the group sent to the United States West Coast was typical. Conversely, those few boats sent into the Indian Ocean scored well against meager defenses.

Amphibious operations were another success area as demonstrated by the astounding number of amphibious landings successfully conducted during the first four months of the war. All but one of these, the first attempt to take Wake Island, were successful. This was despite the fact that the IJN possessed only a handful of dedicated amphibious ships and lacked a sophisticated doctrine for conducting naval gunfire or air attacks in support of landings. The key to Japanese amphibious landings was a doctrine based on the avoidance of attacking defended areas. Instead, the IJN worked with the Imperial Army to develop tactics that caused confusion to the enemy. Using merchant ships carrying landing craft, the Japanese sought to land away from defended areas. Landings were always conducted at night and, if possible, at several spots at once. Almost always, this served to unnerve the enemy and force their retreat. When use of these tactics was not possible, Japanese forces faced trouble. Had the landing on Midway Atoll taken place as planned, the landing against its well-defended beaches would have likely failed.

In the final analysis, despite its success against weak opponents, the IJN was not ready for modern war in December 1941. While it possessed excellent ships and weapons, and well-trained crews capable of employing excellent tactics, it ignored other aspects of war. These included intelligence, logistics, and the application of strategy. All these weaknesses were already apparent in the first six months of the war. The IJN's mythical belief in its ability to gain and win a decisive engagement was proven untrue at Pearl Harbor and again at Midway only six months later. Though a force enjoying superb quality in the opening clashes of the war, it quickly became apparent that quality alone was insufficient to beat an opponent like the USN with a huge industrial and technological base behind it.

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